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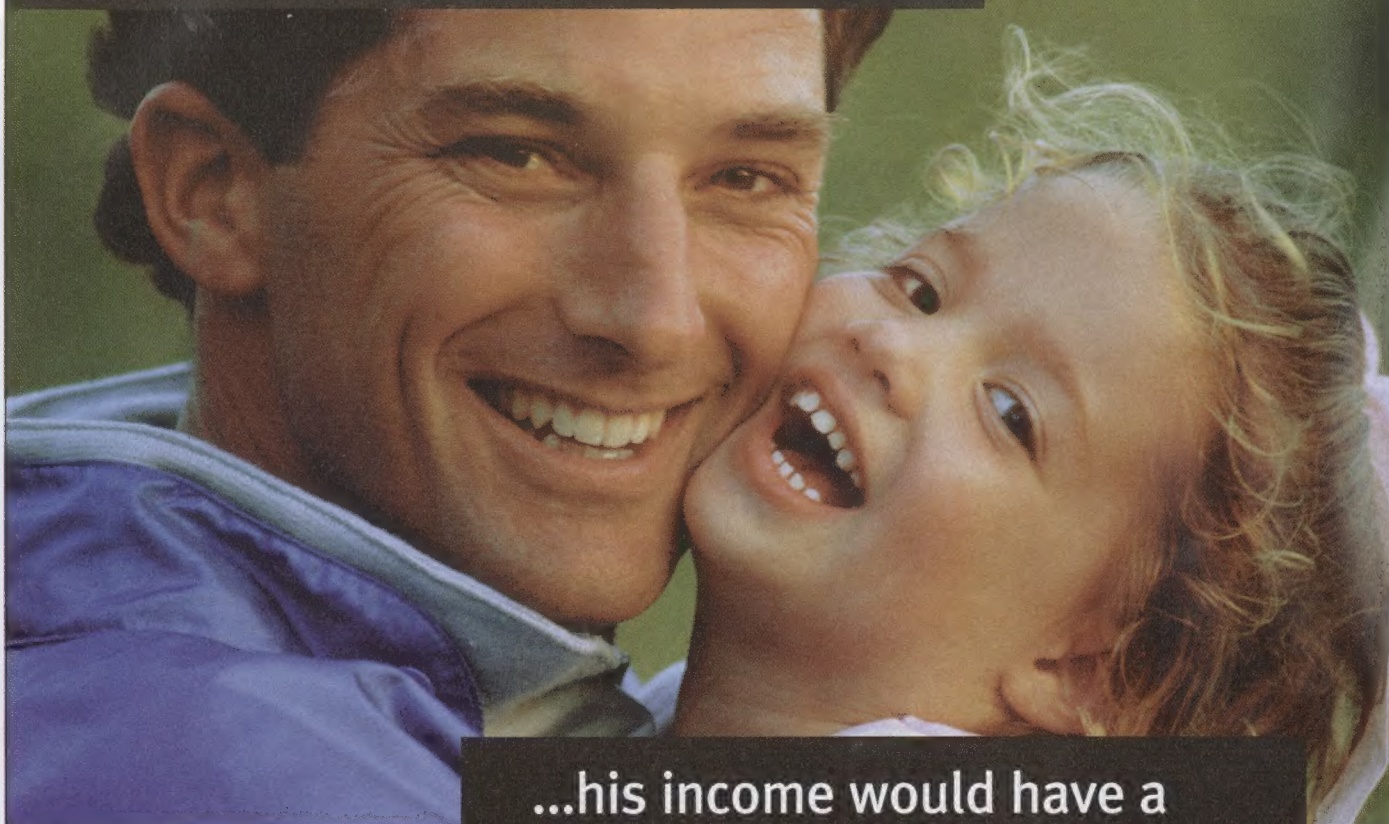
THE UNIVERSITY OF ALBERTA ALUMNI MAGAZINE ■ WINTER 1998/99

Report from the front lines

University of Alberta researchers
and the war on cancer



If Mike was to suffer a heart attack...



...his income would have a major stroke.



A loss of income caused by a critical illness in a family can be a source of unneeded hardship and despair. More and more, and at younger ages, Canadians are forced to deal with a critical illness such as a heart attack, stroke or cancer, which alters their whole lives.

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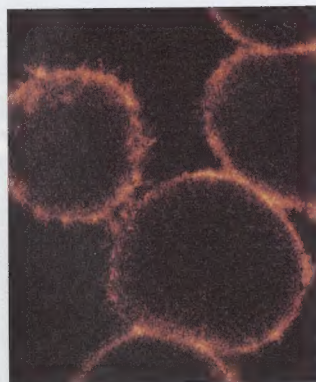
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Cover: Images of individual cancer cells. The bright fluorescence shows the presence of transporter proteins that enable certain types of drugs to pass through the cellular membrane. Courtesy of Wendy Gati (see page 14 for a report on her research).

Design by Lara Minja

U of A Graphic Design Services



NEW TRAIL

VOLUME 53 NUMBER 3

FEATURES

7 Report From the Front Lines: Advances in the War on Cancer

It is the disease Canadians fear most, and progress towards a cure (or cures, because cancer is really more than 100 separate diseases) has, for the most part, been painfully slow. We look at the advances being made by University of Alberta researchers and ask them "Are we winning the war on cancer?"

19 Worthy of Their High Vocation

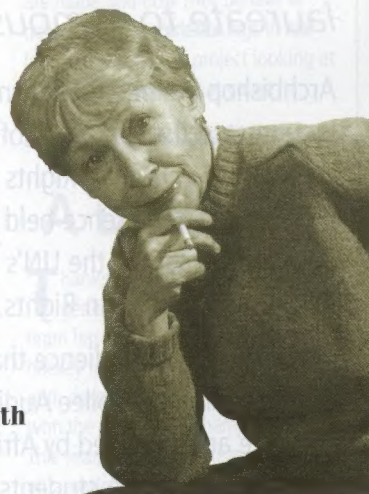
Over its first 90 years, the University of Alberta has been blessed with outstanding faculty members. They've tamed the tar sands, changed the face of nursing in Canada, given a fresh vision to Canadian literature, made pioneering scientific discoveries, established the base for Edmonton's strong theatre community, and much more.

38 Things worth Knowing: The Sequel

As a follow-up to our special 90th anniversary feature last issue, here are some things worth knowing that we learned from our readers.

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University
of
Alberta

New Trail is the University of Alberta alumni magazine. It is published four times per year by the University of Alberta Alumni Association.

450 Athabasca Hall
University of Alberta
Edmonton, AB T6G 2E8

ISSN: 0824-8125 Copyright 1998

Canadian Publications Mail Product Sales
Agreement #1410547

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BASE CAMP



The year 1998 was a personal milestone for me. It was 25 years ago that, fresh out of journalism school, I

began working as a writer at the University of Alberta. A lot has changed in that time (see picture) but I still find the campus to be a stimulating and interesting place to work. Over the years, I have been able to meet some fascinating people – some famous, others much less well known.

As editor of this magazine, I have the opportunity on an almost-daily basis to meet and talk with people who are breaking new ground, working on the frontiers of knowledge in a wide range of endeavors. For this issue, I spoke with researchers from across campus who are doing exciting work aimed at understanding cancer and reducing its toll of suffering and death.

In 1971 – two years before I began working for the University – the Nixon administration in the U.S. declared its war on cancer. It seemed then that the might of medical science would inevitably prevail. Maybe not in five years or 10, but certainly in 15 or 20. It has now been more than 27 years and cancer is far from defeated: it is still the disease Canadians fear most.

As I talked to some of the U of A researchers on the front lines of the war on cancer, I asked them what went wrong, why science has not yet prevailed, and what the prospects are. I found their responses thoughtful and informative, and I am pleased to be able to share them with you.

Rick Pilger
Editor

...it makes sense.

Now That's Fast!

Two U of A researchers are sharing a laser so fast it can stop the electron cloud around an atom dead in its tracks.

Electrical engineering professors, Robert Fedosejev and Abdulhakem Elezzabi, took delivery of their 10-femtosecond titanium sapphire laser late last summer, and now have it rigged up so they both have access to the beam, which is directed from Elezzabi's lab in the Civil Electrical Engineering Building through a vacuum chamber in the roof and down the hall to Fedosejev's lab.

It doesn't take the beam long to make the trip — after all, it travels at the speed of light — but it's an awful lot of 10-femtosecond pulses. A femtosecond is a quadrillionth (one million billionth) of a second. While a beam of light can travel to the moon and back in under three seconds, in a femtosecond it can make it no farther than 1/300th of the thickness of a human hair.

The ultrafast new laser cost \$134,000 and is one of only two of its kind in Canada — the other is at the National Research Council in Ottawa. Among other things it will be used to help gain an understanding of the quickest natural phenomena. It takes, for example, about 10 femtoseconds for an electron to orbit a proton.

The practical uses for the new laser are almost limitless say Fedosejev and Elezzabi. These include medical uses; it could improve eye surgery, make possible micron scale cutting in surgery, and might someday even be used for welding tissue.

While Fedosejev's main interest is taking snapshots to reveal molecular, atomic, and electron interactions, what excites Elezzabi most about "ultrafast science" is the role of optical pulses in the rapidly developing field of information technology — particularly in fibre optics, where light pulses carry data through glass cables. The more rapid the pulses, the more information a cable can transmit. 🐾

Managing Money:

Some Hands-on Experience

For most students, learning to manage money is necessary for their survival and an integral part of the university experience. Now a group of University of Alberta students is getting a chance to hone their money management skills with a portfolio involving some sizeable sums of money — certainly bigger than your typical student loan or last summer's wages.

In cooperation with the Edmonton Society of Financial Analysts, the Faculty of Business has initiated a two-year program that gives selected third and fourth-year finance students first-hand experience in managing institutional investment funds.

Business dean Mike Percy is excited about the PRIME Student Portfolio Management Program. "The investment industry is growing rapidly," he says, "and if our students

are to be successful in this field, we need to provide them not only with theoretical knowledge, but with hands-on experience as well."



Looking into the future, the Business Faculty hopes to build the largest student invested fund in Canada. Its interim goal is to create a \$1 million portfolio over the next few years. Once the fund reaches a significant size, there are provisions for scholarships or other direct benefits to finance students in the Faculty of Business.

To get the program off the ground, the Edmonton Society of Financial Analysts has contributed \$25,000, which has been matched by the University. Private gifts have also been made by members of the financial community. In the first year of the program, the student participants will train as portfolio managers. Each student will work closely with a faculty advisor, and an experienced portfolio manager will act as mentor. 🐾

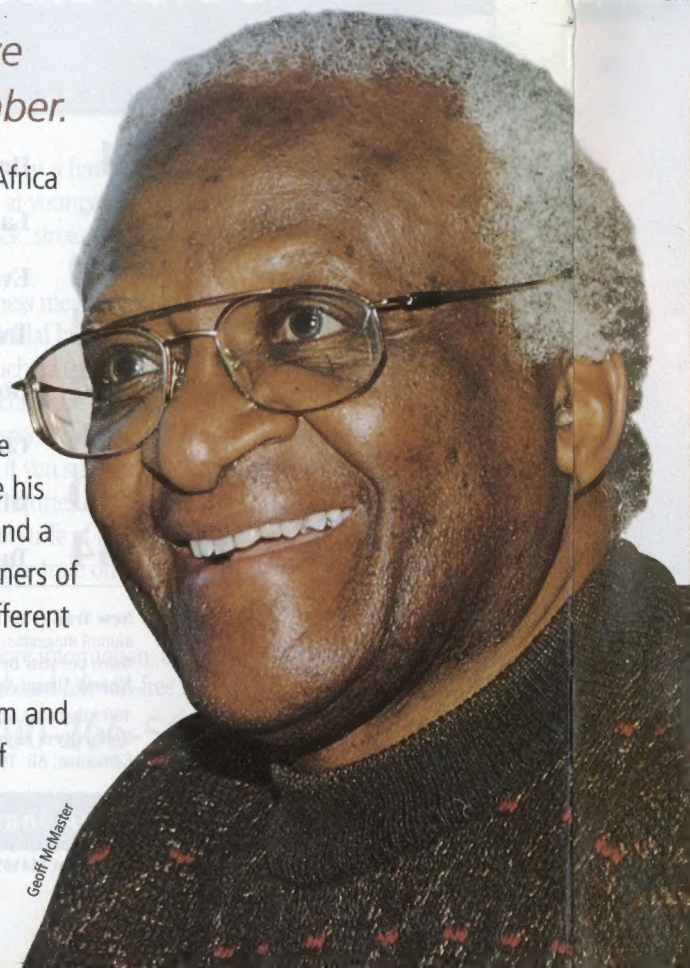
A Profoundly Spiritual Activity

The University community would have a welcomed a Nobel Peace Prize laureate to campus in November.

Archbishop emeritus Desmond Tutu of South Africa inaugurated the University of Alberta Visiting Lectureship in Human Rights as the closing speaker at a conference held to mark the 50th anniversary of the UN's Universal Declaration of Human Rights.

Tutu spoke to an audience that overflowed the Northern Alberta Jubilee Auditorium. He made his entrance accompanied by African drumming and a procession of U of A students carrying 30 banners of various colours, each banner symbolizing a different article of the Declaration.

In his address, Tutu said that "to oppose racism and its gross violation of the fundamental rights of people is not just a political act, it is a deeply religious, a profoundly spiritual activity." 🐾



Geoff McMaster

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Over the Hurdle

The world's third-largest international event will be coming to Edmonton in the summer of 2001, and the University community is sharing in the excitement.

In November, by a convincing 22-2 vote, the International Amateur Athletic Federation voted to award the 2001 World Track and Field Championships to Edmonton. Other contenders for the games were Paris and Stanford University.

The track and field championships will follow the 1978 Commonwealth Games and the 1983 World University Games as a showcase for Edmonton and the University of Alberta. As a recurring international event, they rank only behind the Summer Olympics and the World Cup of Soccer, and are expected to attract some 3,000 athletes and 5,000 members of the media from 290 countries to Edmonton.

A number of people from the University community worked hard to



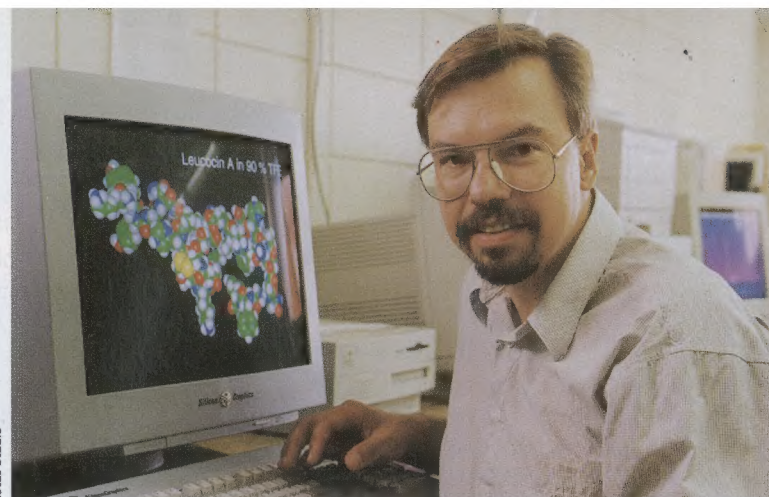
make the Edmonton bid a success, including three former U of A athletic directors: Ed Zemrau, **Bob Steadward**, '69 BPE, '71 MSC, and **Dale Schulha**, '72 BPE, '74 Dip(Ed), '74 MSC.

Steadward, the director of the Rick Hansen Centre on campus and bid co-chair, is excited about the possible legacy for the University. "Now we've got the opportunity to develop some incredible facilities for our future University athletes," he says.

It is expected that the University will benefit with a new track-and-field/multipurpose practice facility, as well as new student residences. (Final decisions on facilities are to be made by the end of April.)

The Edmonton bid had strong support from all three levels of government and the economic benefit of the championships is expected to be about \$286 million for Edmonton alone. 🐾

Lotus Studio



University Cup Winner Makes Science Egg-citing

Take an antique soup tureen once used in the Athabasca Hall dining room, mount it on a base made from the wood of a maple tree that formerly stood on campus, and the whole is greater than the sum of its parts.

You have, in short, the University Cup, the University's highest award for teaching and research.

This year's winner is chemistry professor John Vederas, who investigates biological systems at the molecular level, finding how molecules are made and how they behave in nature. Current undertakings in his laboratory include a project looking at how to stop viruses that cause

diseases ranging from hepatitis A to the common cold and an initiative aimed at developing a class of compounds known as bacteriocins to combat harmful bacteria.

A 1995 winner of one of the University's Rutherford Teaching Awards, Vederas brings an infectious enthusiasm for science to the classroom — which can sometimes get messy. Ask the student seated in the front row who was spattered by egg not too long ago; Vederas was showing that, while an artist might be content to admire the egg's shape, a scientist wants to know what's inside. 🐾

FOIPP

For almost two years, the University has been preparing for the implementation of Alberta's new Freedom of Information and Protection of Privacy Act. The legislation will come into effect on 1 September 1999.

The U of A is committed to both the substance and the spirit of the Act, says University archivist Bryan Corbett, who has undertaken duties as the campus FOIPP coordinator. "We are committed to making all information available, except that which the FOIPP Act allows us to exempt or which conflicts with the personal information protection provisions of the legislation," says Corbett.

Under the FOIPP legislation, alumni are granted not only the right to protection of their personal information, but also the right to view any of their personal information the University has accumulated, and the right to correct any erroneous information. Along with that goes the right to have any decisions made by the University reviewed by an independent commissioner.

An access to information process has been established, and a directory of relevant information and personal information banks will be maintained by the University, says Corbett. He invites anyone with questions related to the process to contact the FOIPP Office at 492-0531. 🐾

South African Archbishop
Desmond Tutu

A DEN FOR THE PANDAS

Thanks to some corporate generosity, the Panda's ice hockey team has a new den. The Pandas hockey team was resurrected last year and, despite some stiff competition, won the conference championship. This year, the team is clearly focused on a national title. Financial support for the conversion of an existing dressing room in the Clare Drake Arena came from the executive search firm Park Davies. U of A alumnus and former Golden Bear hockey player, **Darwin Park**, '67 BPE, says that, because it knows how it feels to be the new kids on the block, his company wanted to support a new



program without established sources of funds. Since Park Davies' donation, other companies have donated carpentry work, painting, and carpeting to spruce up the Panda's new den. 🐾

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BEAR COUNTRY



At Reunion Weekend 1998 President Fraser was asked about the relative level of government support the University receives. Questions from alumni indicated their interest in knowing how the support the University of Alberta receives from government compares to that received by similar institutions in other jurisdictions. There was a perception that the University had previously been so generously funded that, despite recent setbacks, in relative terms it still fared well.



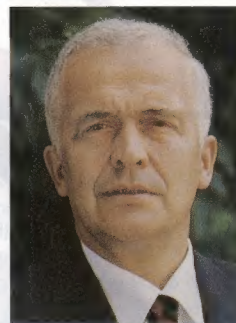
Not so, says President Fraser: "In real terms, our level of funding per student in the 1980-1981 session was 67 per cent higher than it is today. There has been a dramatic change in the flow of funds from the provincial government.

"Today, in the Canadian context, there are about four universities in Ontario estimated to be at least 20 per cent better funded than we are on a per-student basis:

U of Toronto, Waterloo, McMaster and Queens. UBC is over 30 per cent better funded from the combination of tuition and government grants. Since tuition fees in B.C. are lower than in Alberta, government funding per student is in the realm of 40 to 45 per cent higher per student.

"In the United States, 80 per cent of all American students go to state-supported universities, such as Wisconsin, Illinois, Indiana, and so on. Our students are clearly competing for the best jobs with graduates from these big state-supported schools that have funding levels – adjusted for purchasing power – that are at least 50 per cent, and often more than 100 per cent, higher than we receive from the province.

"Looking elsewhere, New Zealand has 35 per cent higher government funding per student than Alberta universities. Singapore has roughly the same population as Alberta, and the average Singapore family income is a little higher, but not that dissimilar to the average income level in Alberta. Government funding in that country is twice the level here, on a per-



U.S. state universities are often 100 per cent better funded, says President Fraser

higher levels of funding support for their universities.

"How have we reacted to this reduced funding? In at least three ways: first is a massive reorganization and consolidation of our academic disciplines; we have also reduced the number of the University's vice-presidents from five to three; and we have launched our largest, most comprehensive fund campaign ever, asking our alumni and friends to be our partners in sustaining the legacy that has been built at this University over the past 90 years."

student basis. "There are other examples in the world that suggest that countries with similar standards of living to those of Alberta or Canada make decisions that result in significantly



LANDMARKS

■ Civil engineering professor Nallamuthu Rajaratnam received the 1998 Hydraulic Structures Medal for outstanding contributions in the areas of hydraulic jumps, energy dissipators, outlet works and topics related to environmental fluid mechanics.

■ The prestigious 1998 Roy L. Whistler Award was granted to Dr. Ole Hindsgaul by the International Carbohydrate Organization. This prize recognizes significant contributions in the field of carbohydrate chemistry or biochemistry with the promise of continued contributions.

■ Petroleum engineering professor Syed M. Farouq Ali received the Kapitza Gold Medal of Honour from the Russian Academy of Natural Sciences. This medal, named after Nobel Laureate and former head of the academy L. Kapitza, is awarded for work which is considered of Nobel Prize quality in fields where Nobel Prizes are not granted.

■ The first recipient of the Canadian Association for Gastroenterology/Solvay

Pharma Inc. Fellowship is Dr. Karen Madsen, research associate gastroenterology. Madsen will continue her research on inflammatory bowel disease at the U of A with the help of the \$55,000 award.

■ The University notes with sorrow, the passing of four individuals who made outstanding contributions as faculty members. Lane Alan Daley, who held the chartered accountants chair in the Faculty of Business, died at his home from pancreatic cancer. He was the first recipient of the Teacher of the Year Award given by the Institute of Chartered Accountants of Alberta.



Bruce E. Nesbitt (below), associate chair of the Department of Earth and Atmospheric Sciences, drowned in late August while vacationing in Quebec. A popular professor, he had an interest in the paleohydrogeology of the earth's crust. Professor emeritus Grant Davy died in October. A former chair of the

Department of Political Science, he was well known as a public commentator and critic of government. Donald Robinson, a popular professor of chemical engineering, passed away in October.

■ The Sustainable Forest Management Network at the U of A will receive \$9 million to continue its research in sustaining the boreal forests of Canada. The three-year funding will come from the federal Network of Centres of Excellence Program.

■ The American Society for Materials in Ohio and The Materials Society in Pennsylvania awarded the U of A Materials Engineering Technical Society (METS) with the 1998 Chapter of Excellence Award. This honor is conferred upon the top five student chapters in North America.

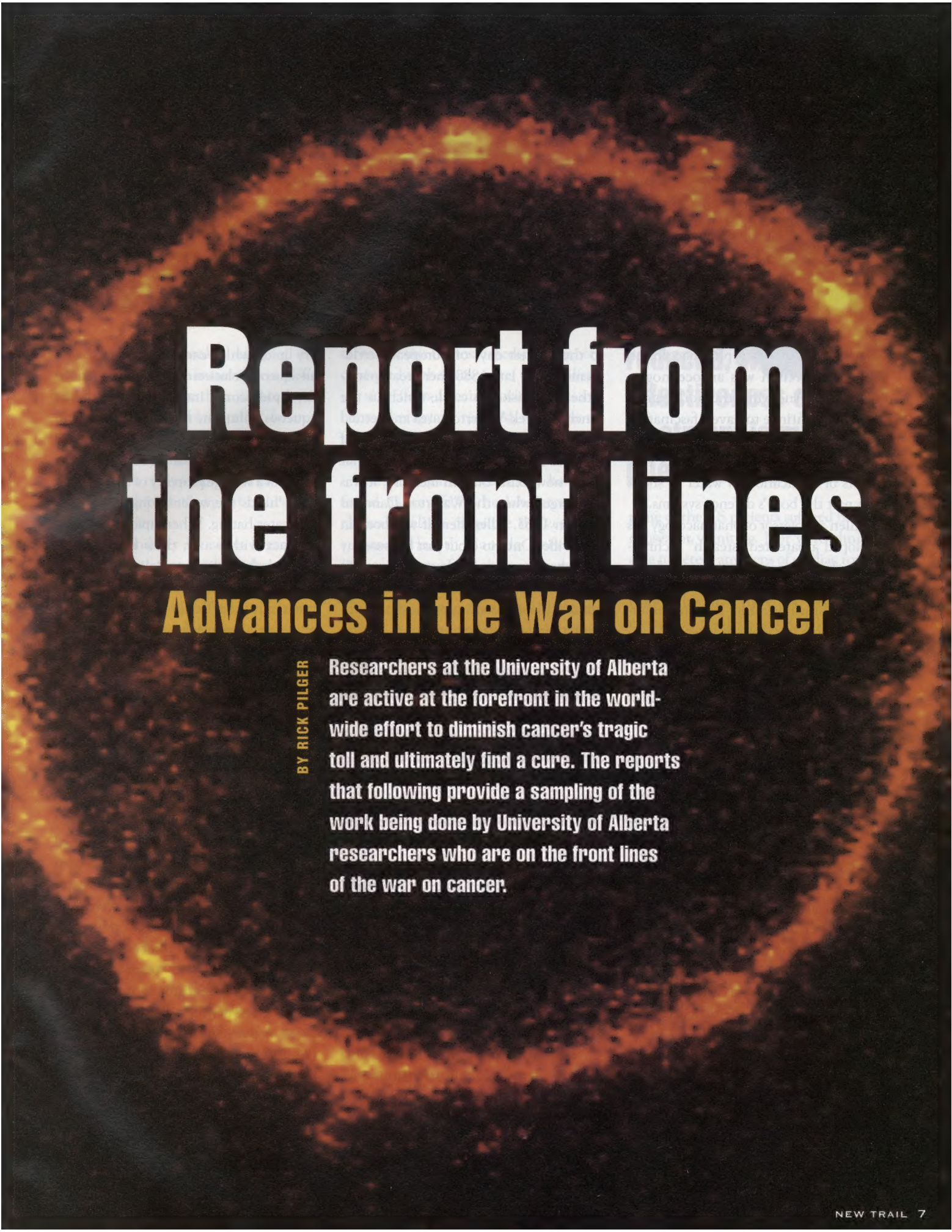
■ The International Organization for Mycoplasma (IOM), recently announced Dr. Chuji Hiruki, professor emeritus, plant pathology, as one of the recipients of the Mycoplasma Recognition Award. Hiruki was hailed for his

contributions to IOM and for his service to the study of mycoplasma.

■ The Alberta Science and Technology Foundation (ASTech) recently recognized three U of A professors. Dr. James Murray was honored for his contribution to the Alberta science and technology community. The award for outstanding leadership in Alberta science went to Richard Peter, Dean of Science. Dr. Don Scott was awarded the Syncrude/ASTech Oil Sands Research Prize.



■ In early September, Austria's minister of science and technology, Dr. Casper Einem (left) was on campus to open the first Canadian Centre for Austrian and Central European Studies. The Centre will offer a venue to explore both culture and commerce and will serve as a link between researchers, scientists and the communities they serve. It will also address the issue of social responsibility by the scientific community.



Report from the front lines

Advances in the War on Cancer

BY RICK PILGER

Researchers at the University of Alberta are active at the forefront in the world-wide effort to diminish cancer's tragic toll and ultimately find a cure. The reports that following provide a sampling of the work being done by University of Alberta researchers who are on the front lines of the war on cancer.

TERRY ALLEN

Water Runs Through It



Before she was a pharmacologist, Terry Allen was an oceanographer. And while the world's great salt waters continue to have a fascination for her, she is also interested in a microscopic world in which she cloaks tiny packets of medication in water to sneak them past the body's defence systems.

Allen a professor of pharmacology has developed a patented "stealth" technology for the delivery of anti-cancer drugs. The breakthrough technology – analogous to the technical wizardry that makes aircraft invisible to radar – was recently approved by Health Canada and is now being used to greatly improve the effectiveness of the popular chemotherapy drug doxorubicin. The new technology not only decreases the damage to healthy cells, but reduces the side effects from the drug.

"It's a new way of administering an old drug," says Allen, who points out that the implications for the stealth technology are far-reaching: not only could it be used to strategically administer a variety of other cancer medications, it could also prove useful in gene therapy. Basic to the new technology are tiny membraneous spheres ("almost like tiny water-filled balloons," says Allen) that encapsulate the medication and protect it as it is carried through the blood. To prevent their triggering an immune system response, the spheres – known as liposomes – are designed to attract a cloak of water.

Allen's interest in liposomes predates her coming to the University in 1977 to accept a faculty appointment in pharmacology. Her arrival was a homecoming of sorts: her roots in the province run deep,

to the earliest days of European settlement. In the late 1880s her great-grandfather established a cattle ranch in the Pincher Creek-Waterton area and settled his family in a log cabin built as part of the first NWMP post in the area. That cabin now exists only in memory; it was submerged when the Waterton Dam was built in 1963. Allen herself was born in Belleville, Ontario ("but just because my mom happened to be passing through") and spent her early years moving from place to place according to the dictates of her father's air force career.

It was while she was living on the West Coast that Allen saw her future – albeit darkly – in the water of a tidal pool. Fascinated by the teeming life of the miniature waterworld, she set her sights on a career in oceanography. That led to the University of Ottawa, where she did a degree in biochemistry, and then to Dalhousie, where she earned a doctorate in oceanography.

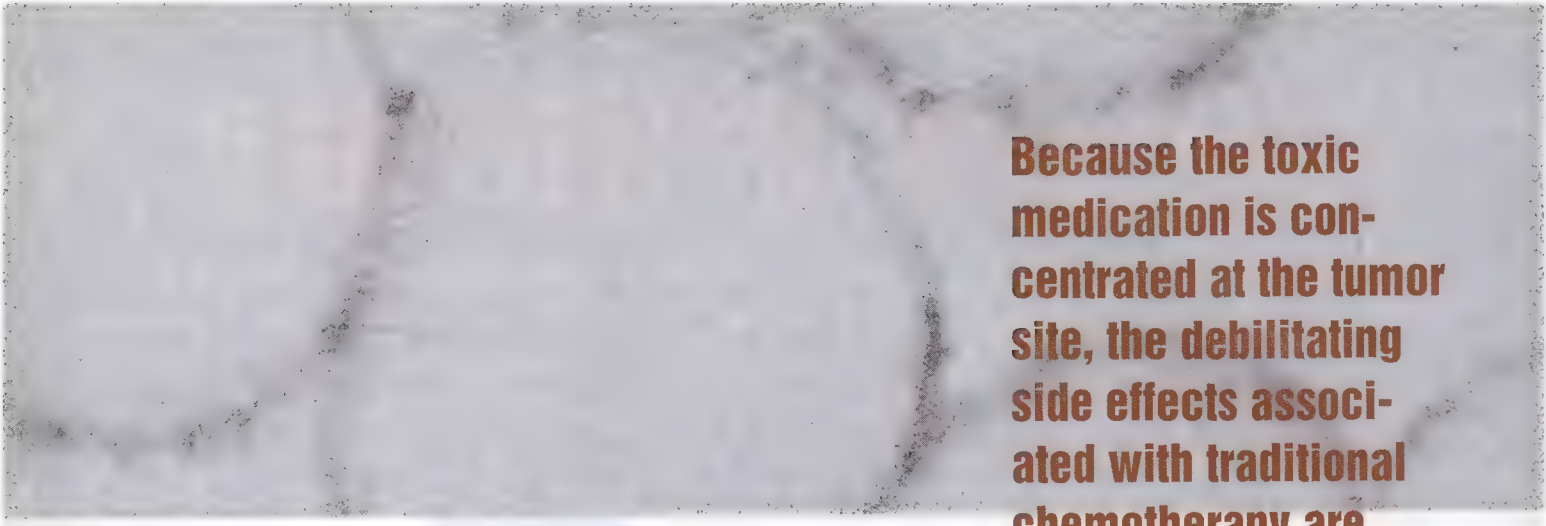
Allen first encountered liposomes as a tool to help understand the biophysics and function of the membranes of the aquatic creatures she was studying. Gradually she began to become interested in liposomes in their own right, and she changed careers after becoming excited by the possibility of using liposomes to transport drugs in the body.

The technique for creating drug-filled liposomes is actually quite straightforward. Organic solvents are used to extract lipids – which are the basic component of animal fat and, by definition, insoluble in water – from a source such as the lecithin of egg yolk. Removal of the solvent leaves

dry lipids, which can then be mixed with an aqueous solution of the drug. When the dry lipids come into contact with the aqueous solution, tiny spherical membranes containing the drug are formed as if by magic. This apparent alchemy is the result of a strange property of lipids: while their 'heads' are water loving, their 'tails' are water-hating. When lipids come into contact with water, their hydrophilic-hydrophobic split personality leads them to group together in a formation that exposes only their 'heads' to the solution. In so doing, they neatly encapsulate small amounts of the water – and anything dissolved in it. Sonic disturbance is used to control the size of the liposomes. Those with which Allen works are so small that they must be viewed with an electron microscope.

While production of drug-filled liposomes is not difficult, ensuring safe passage through the bloodstream proved more challenging. The body is not used to seeing a naked membrane surface, explains Allen, and in her initial attempts at administering drugs via liposomes, no sooner were the liposomes introduced to the bloodstream than the body mounted an immune system response. The liposomes were recognized as either foreign invaders or damaged cells that needed to be destroyed, and the macrophages (white blood cells) that line the blood vessels and the liver for just that purpose were quickly called into battle. "The liposomes didn't have much chance to bring the drug to where we wanted it," recalls Allen.

In the mid-1980s Allen began disguis-



Because the toxic medication is concentrated at the tumor site, the debilitating side effects associated with traditional chemotherapy are reduced, while the effectiveness of the treatment is multiplied many times.

ing liposomes to sneak them past the watchmen of the immune system. "We had this idea to make their surface more like the surface of red blood cells," she says. Red blood cells, among the simplest cells that circulate within the bloodstream, have a "forest of glycolipids and glycoproteins, all sticking out" to protect their surface, says Allen.

As she and her associates began trying to replicate that forest on the surface of their liposomes, they discovered that grafting the water-loving polymer polyethelene glycol to the membrane surface proved especially effective in circumventing immune system attacks. It was the starting point for the stealth technology. Soon Allen's laboratory was manufacturing liposomes that attracted a complete shell of water, thus ensuring their safe passage through the bloodstream and past the white blood cells amassed in the liver.

With the technology in place to circumvent the body's immune system, Allen turned to the challenge of getting her liposomes to the desired locations in the body. Targeting tumors, she soon found out, was no problem at all: "The solution was to let the body do it for you." Normal blood vessels, explains Allen, have tightly-knit walls, through which the liposomes are unable to pass. However, the new blood vessels that proliferate to support the rapid growth at tumorous sites are much more permeable, and the liposomes leak out through gaps between the cells of the vessel walls. "And they don't appear to go back," adds Allen. Instead, the liposomes remain in the cancerous tissue and gradually release their potent con-

tents. Because the toxic medication is concentrated at the tumor site, the debilitating side effects associated with traditional chemotherapy are reduced, while the effectiveness of the treatment is multiplied many times.

Allen's stealth technology has now found its way from the laboratory and clinical trials to drugstore shelves. This summer, Health Canada licensed a liposomal form of the chemotherapy drug doxorubicin with the brand name Caelyx. (The same drug had previously been approved in Europe and in the U.S., where it is sold under the brand name Doxil.)

Caelyx has been licensed specifically for the treatment of Kaposi's sarcoma (KS), a cancer found more commonly in people living with AIDS. The condition occurs initially in the skin or tissue under the mucous membranes lining the mouth, nose or eye, but it can also spread to the liver, gastro-intestinal tract, and lymph nodes. People who suffer from KS often develop disfiguring blotches or tumors on the skin or inside the mouth.

Clinical trials of 723 patients with AIDS-related KS showed Caelyx to be a particularly effective treatment. In up to 65 per cent of the cases it brought about some degree of remission. In a further 25 per cent of the patients, the disease was stabilized. Overall results showed that 48 per cent of patients experienced lesion flattening, 56 per cent had an improvement in lesion color, and 45 per cent experienced a reduction in pain.

Those results show that Caelyx approximately doubles the effectiveness of doxorubicin, says Allen. At the same time,

none of the KS patients suffered hair loss, nausea or vomiting. Nor were clinicians able to detect any signs of cardiac toxicity, she says. Researchers at Edmonton's Cross Cancer Institute have also obtained encouraging results using Caelyx to treat other cancers. Clinical trials now underway have demonstrated its usefulness in treating patients with lung, breast and ovarian cancers.

While passive targeting is effective for treating patients with solid tumors, Allen knows that that's not going to work with cancers of the blood, and she is now exploring ways of "addressing" liposomes using antibodies to attach the liposomes to cancer cells.

Although her work with liposomes has taken her away from oceanography, Allen has not forgotten her love for the sea and, parallel to her liposomal work, maintains a program of research into the pharmaceutical properties of marine natural products. That research has recently led to a patented anti-asthmatic drug that is soon to be tested in clinical trials, and other substances are showing promise as anti-cancer agents. And some, she says, would be good candidates for liposomal delivery.

■ Dr. Allen's work is supported by SEQUUS Pharmaceuticals Inc., and by grants from the Medical Research Council, including a grant through MRC's University-Industry Grants Program.

Are we winning the

In 1971 the Nixon administration in the U.S. declared a war on cancer.

It began by enacting the National Cancer Act and set about establishing the National Cancer Institute. In North America and throughout the western world, a populace which had seen polio defeated, tuberculosis wards shut down, and once-dreaded diseases such as smallpox relegated to history books was optimistic that cancer would soon succumb to the inevitable march of medical progress.

Activated by Light

As a bio-organic chemist with an international reputation, U of A professor Bill Lown has done his share of globe-trotting, and over the past 30 years he's come back with some interesting souvenirs (including the prestigious Paul Ehrlich Prize from the French Association de recherches scientifiques Paul Neumann). But perhaps the most interesting thing ever to come back in his suitcase was some pigment from a fungus that attacks bamboo.

On a 1988 lecture trip to China, Lown kept hearing about the interesting properties of this pigment used in traditional Chinese medicine to treat skin conditions. It seemed to be energized by light, and his Chinese hosts thought it might have potential as a cancer therapy. Was Lown interested?

He was, and they sent a 10-gram package of the purified pigment home with him.

That pigment, which has the name hypocrellin, is now the basis for an exciting new photodynamic cancer therapy being tested for use in treating both bladder and

prostate cancer. Photodynamic therapy is a unique treatment alternative for malignancies resistant to conventional therapies. It involves the selective destruction of malignant cells with substances that become deadly to cancer cells – when they are exposed to ordinary visible red light.

Once he began studying hypocrellin, Lown became excited about its potential for photodynamic therapy and brought together

a diverse group of researchers to develop an appropriate treatment method. Included were John Tulip, a laser specialist from the Department of Electrical Engineering; Jerry Miller, who undertook preclinical evaluations of the various hypocrellin derivatives which Lown was able to synthesize; and surgery professor Ron Moore.

Miller, who recently joined the Faculty of Pharmacy and Pharmaceutical Science's Noujaim Institute, explains that hypocrellin is itself nontoxic until it is excited by red light. (Fortunately, red is the color from the visible spectrum that penetrates the farthest through tissue – which is why your flesh appears red when you shine a flashlight through it).

Once the hypocrellin molecules are activated by the light they generate toxic oxygen species that are deadly to surrounding cells. Thus it is possible to administer hypocrellin to a patient and then selectively illuminate malignant tissue with a red-light laser, destroying the cancer and leaving healthy tissue untouched. Hypocrellin derivatives have now been extensively tested and they work “like a charm,” says Lown. “In animals we’ve had 100 per cent success.”

Miller and Lown say that the chief advantage hypocrellin has over the product currently licensed for photodynamic therapy is that it is excreted from the body quickly – within 24 hours. Therefore the patient doesn’t suffer from lingering phototoxicity and confinement to a darkened room, often

for up to several weeks.

While hypocrellin is initially being tested for use with bladder cancer, Miller says that it has potential for use in fighting a number of other cancers – including lung, esophageal and colorectal cancers – where red light, which can be delivered using an endoscope, can penetrate to a sufficient depth (about five millimetres).

“We’re now very near clinical trials,” says Miller, who has confidence in both hypocrellin and the future of photodynamic therapy. “The advantages,” he says, “are many, including a good deal less morbidity than you see from surgery, radiation or chemotherapy.”

■ Support provided by the National Cancer Institute of Canada's Terry Fox Program, the Alberta Heritage Foundation for Medical Research, the Alberta Cancer Board, and the U of A Faculty of Medicine and Oral Health Sciences.

MOORE (L) & TULIP WITH DR. JIMMY XIAO



The Need for Speed

“It’s academic. Global. Virtual.” Jean-Marc Nabholz ticks off on his fingers the characteristics of the innovative cancer research group that he heads.

Speed is a fourth characteristic of the Breast Cancer International Research Group, which Nabholz was instrumental in establishing and which is already being viewed as a model.

Nabholz describes the BCIRG, which



LOWN (L) & MILLER

the war on cancer?

More than a quarter of a century later, however, the war on cancer is far from won: it is the disease Canadians fear most, and the nation's second leading cause of death (behind heart disease). In the past 12 months something like 130,000 new cases of cancer have been identified; in that same period more than 60,000 Canadians have died as a result of the disease. The comparable figures in the U.S. are 10 times as high. ▶

Opening Doors

To give a sense of her research, Carol Cass paints a word picture of a single human cell as a house. "Think of it as having many different rooms – a furnace room, a garbage room, a room for producing new parts; the nucleus could be the library, where you could find all the information needed to reproduce the house."

Cass, who is chair of the University of Alberta's Department of Oncology, is interested in the doorways to those many rooms and to the house itself – or more precisely, perhaps, in the doormen whose job it is to either usher guests into the room or refuse entry to unfamiliar faces.

"We're really interested in understanding the role of transporters," she says, "not only because they are innately interesting, but because we need to understand what's

happening if we want to interfere with it." Working with clinician John Mackey, a faculty member in oncology, Cass is investigating a major problem relating to chemotherapy treatment – the development of drug resistance.

"We've seen in the test tube cancer cells lose their doors and become insensitive to nucleoside drugs," says Cass. (Nucleoside drugs are compounds whose shape is tailored to be so similar to that of nucleosides – which are natural precursors of nucleic acid – that the "doormen" of malignant cells let them inside.) She and Mackey want to know why the transporters that previously carried the drug across the cell membrane no longer do so. To address this question, Cass and

Mackey are collecting "bits of cancer" from actual patients and studying the transporters themselves, as well as the genetic makeup of the cancer cells, using the latest scientific techniques.

"One of the goals," explains Mackey, "is to determine which patients will benefit from treatment. Ideally, if we had a hundred patients, instead of treating all 100, we would pick out the likely winners and only treat them. That would not only spare the others the side effects, but we wouldn't waste time which could be spent looking at other treatment strategies." In the clinic, says Mackey, it can take as long as three months to know if a patient is responding positively to chemotherapy treatment. A reliable predictive test

See Doors, page 12...

is centred at the U of A, as a "fruit of necessity." It was born of a need to facilitate interaction between the pharmaceutical industry and the academic world in the development of new and promising agents for use in treating breast cancer.

More than anything else, the BCIRG is about the need for speed – the need to lose no time in getting the best possible treatments to patients. A clinician and head of the Northern Alberta Breast Cancer Program, Nabholtz must, on a daily basis, deal with the reality of patients dying. He points out that while the drug manufacturers are bringing forward a mul-

titude of promising new compounds – any one of which could dramatically reduce the toll taken by breast cancer – none can be proven or see widespread use until it is thoroughly tested in clinical trials. And the traditional testing methodology is painfully slow, and the pool of suitable candidates, limited.

"With BCIRG we are fighting the classical paradigm where each country does its own testing," says Nabholtz. His international group currently consists of more



than 500 investigators in 22 countries located on four continents. The investigators all have solid academic credentials and are linked together through modern computer and telecommunications technology.

The fact that the BCIRG is "virtual", rather than being more rigidly constructed, gives it the ability to adapt quickly, and the fact that it deals with a variety of manufacturers gives it an extra degree of credibility. For any clinical trial a flexible

See Speed, page 12...

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Are we winning the war on cancer?

What has gone wrong? Have the millions after millions of dollars that have gone into cancer research been spent in vain? Are we making progress or not? **Are we winning the war on cancer?**

When that question is put to some of the University of Alberta medical scientists who are on the leading edge of cancer research, their response is a measured 'yes.' But there are many dimensions to the question, they point out. Cancer is not a single disease, they say: it is a name given to a group of diseases — well over 100 separate diseases — all of which arise as the result of changes in genes that control cell growth and behavior.

Doors continued...

could save some of that precious time.

The University of Alberta has long been a leader in transporter research. Much of the work being done in Cass's lab relates to the nucleoside transporter known by the nickname

"es." Discovered in 1969 at the University of Alberta by Alan Paterson, now a professor emeritus of pharmacology, this protein was the first nucleoside transporter discovered and has since been shown to be

the most common, opening doors both to the cell and to its various "rooms." A handful of other transporters have been discovered since, and the chemical structure of four of the transporters has been defined.

"We want to understand them at the level of protein — how they're folded and what they look like — and there are still many questions to answer at the level of the cell," says Cass. "How do the transporters know where to go? Why do they sometimes stop working? And how can we influence the process to help our patients?"

■ Support provided by the National Cancer Institute of Canada, the Medical Research Council of Canada, and the Alberta Cancer Board.

Speed continued...

selection of academic investigators can be quickly formulated based on the type of strategies and trials to be performed. Whereas in Canada enrolling 400 patients in one cancer trial is often difficult, the BCIRG can quickly deliver a much larger number of suitable candidates — and they come from a very diverse backgrounds, which gives greater validity to the results.

The BCIRG was established less than two years ago with industry funding for two large adjuvant drug trials, and it has already shown how quickly it can deliver results: its first huge trial was completed 12 months early.

Nabholtz admits that he has "worked

like crazy" to make BCIRG a success (he estimates that in the past two years he has given between 70 and 100 lectures worldwide to promote the group) but the "phenomenal" response has been rewarding, he says. He can also find satisfaction in the fact that the BCIRG success has not gone unnoticed: already there is a great deal of interest in establishing a parallel group in the area of lung cancer.

But what's most important of all, he says, is that better drugs will be getting to patients sooner. "That's what matters."

■ The BCIRG is operated with the cooperation of the Alberta Cancer Board; funding is provided through contracts with pharmaceutical manufacturers.

Relevant to the Human Condition

Using an ultrasensitive assay developed on campus, University of Alberta researchers are now able to monitor DNA damage resulting from the hazards of everyday life.

The innovative assay developed by Chris Le, a professor of public health medicine, with help from biochemist Michael Weinfeld, a researcher at the Cross Cancer Institute, represents a giant leap forward. It is a thousand times more sensitive than the DNA assays now widely used, says Le.

"What's exciting is that we can now monitor cellular repair capacity and detect DNA damage from exposures at relevant levels to the human condition," says Weinfeld. The work that he and Le are doing is important to understanding can-

cer because DNA damage is considered one — and possibly the major — cause of cancer. Furthermore, the researchers say that their assay provides a means to monitor the abilities of cells to repair themselves after suffering damage — and that includes the ability of cancerous cells to repair the damage inflicted by therapeutic radiation.

The new assay has roots in work Le did as a postdoctoral fellow in the laboratory of U of A chemistry professor Norm Dovichi, who is widely recognized for his pioneering work that combines capillary electrophoresis and laser-induced fluorescence detection to provide a means of automating gene sequencing.

Capillary electrophoresis is a novel technique for rapidly separating molecules,



BACKLEY & CASS

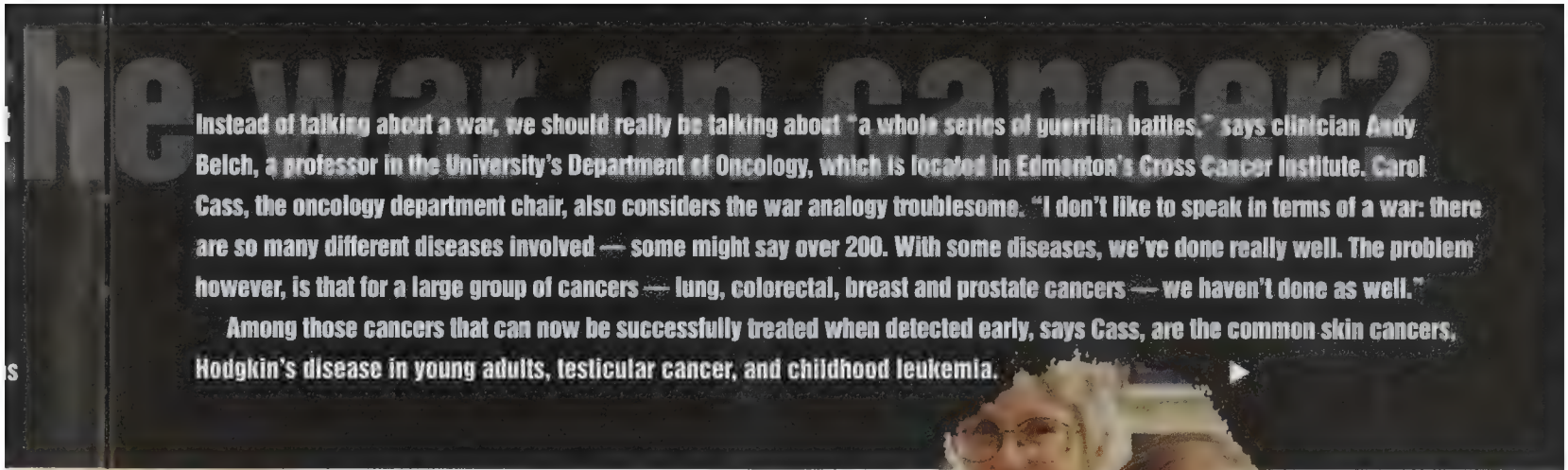
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Instead of talking about a war, we should really be talking about "a whole series of guerrilla battles," says clinician Andy Belch, a professor in the University's Department of Oncology, which is located in Edmonton's Cross Cancer Institute. Carol Cass, the oncology department chair, also considers the war analogy troublesome. "I don't like to speak in terms of a war: there are so many different diseases involved — some might say over 200. With some diseases, we've done really well. The problem however, is that for a large group of cancers — lung, colorectal, breast and prostate cancers — we haven't done as well."

Among those cancers that can now be successfully treated when detected early, says Cass, are the common skin cancers, Hodgkin's disease in young adults, testicular cancer, and childhood leukemia.

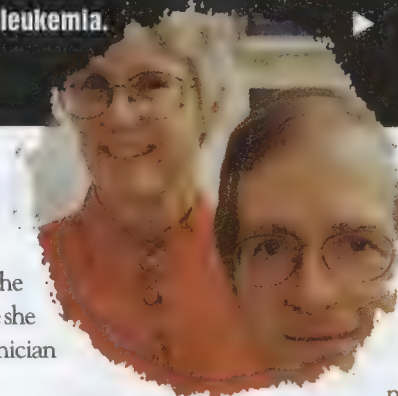
Reimposing Control

Compared to some more common cancers, multiple myeloma generates few headlines, but it is a killer that afflicts about one million people worldwide and so far has resisted the best efforts of medical science to defeat it.

Myeloma has long been understood as a cancer of the bones, and indeed it is here, in the bone marrow, that the disease runs its deadly course. Now U of A researchers Linda Pilarski and Andy Belch are looking beyond the bones to understand the origins and spread of the disease. Pilarski is a basic researcher, a former immunology professor whose interest in myeloma has taken her to an appointment

in oncology and an office in the Cross Cancer Institute, where she collaborates with Belch, a clinician and professor of oncology.

Multiple myeloma is characterized by uncontrolled growth of plasma cells in the bone marrow. Normally plasma cells — the body's factory for producing antibodies — make up less than five per cent of the cells in the bone marrow. When they proliferate (sometimes climbing to as high as 90 per cent of marrow cells) they upset the body's chemical balance. The consequences can include kidney failure, thickening of the blood, and a weakening of the



immune system — many myeloma patients die of opportunistic infections.

While the malignant plasma cells themselves have long been the focus of myeloma research, Pilarski and Belch were inspired to look elsewhere. Plasma cells, explains Belch, have a propensity to stay put in the marrow. However, myeloma patients typically have multiple lesion sites, in which the malignant cells can all be shown to have a common origin. And that, he says, points to a "very, very active" process of spread. About 10 years ago, Pilarski and

See Control, page 14...

PILARSKI & BELCH

tion

including the large biomolecules such as DNA and proteins. Laser-induced fluorescence detection makes it possible to detect minute quantities of molecules that have been fluorescently labelled. To these two techniques, Le and Weinfeld added an immunological approach, involving antibodies that recognize DNA damage, to develop their assay. The assay works by separating fluorescently-labelled antibodies that are bound to damaged DNA from unbound antibodies.

Because their new assay is relatively simple and — once it is set up — relatively inexpensive, Le and Weinfeld can see it one day being used to monitor DNA damage to people at risk. "One of the main problems in assessing

cancer risk has always been that we have never been able to measure DNA damage from such things as ionizing radiation at doses you would encounter in the workplace or from clinical exposure," says Weinfeld.

In a paper in the 15 May 1998 issue of the prestigious journal *Science*, the University of Alberta researchers point out that, besides its potential clinical application their assay could allow DNA damage to be a direct biomarker for human exposures to carcinogens. "Rather than the current reliance on extrapolation of orders of magnitude from high dose bioassays from rodents, a sufficiently sensitive measure of

DNA damage could allow for a more realistic assessment of environmental risk," they write.

Using their

assay Weinfeld and Le have been able to show how cells respond to damaging radiation by manufacturing proteins to repair the damage. But the response is not immediate — it takes time for the proteins to be produced. Weinfeld and Le now want to know how long the repair effect lasts. That knowledge is important, they believe, for radiation therapy strategies. Often such therapy is administered on consecutive days, but if the repair proteins persist for more than a 24-hour period, they may decrease the effectiveness of the therapy.

"It might be," says Weinfeld, "that we should be delivering a dose of radiation and then following up immediately before repair kicks in."

■ Support provided by the National Cancer Institute of Canada, the Natural Sciences and Engineering Research Council, the Alberta Heritage Foundation for Medical Research (through the Eco-Research Chair), the Alberta Cancer Board, and the National Institutes of Health.



WEINFELD (L) & LE
Standing: Postdoctoral Fellow James Xing & Technologist Jane Lee

Are we winning the

The progress made in fighting childhood leukemia, the most common cancer in children, is "a good story all around" says pharmacologist Wendy Gati, who investigates how some cells resist the toxic effects of cancer drugs. Looking back to the 1940s, says Gati, the survival rate for children with leukemia was zero. "You can actually plot out, decade by decade, the progress that has been made," she says, "from 20 per cent survival to 30, to 40 and so on. Today about 95 per cent — maybe as high as 98 per cent — of children will respond to initial treatment. Something like one-third will later relapse, but 70 per cent are now being cured. And there is every reason to believe that the stepwise progression will continue."

Gati points out that, by contrast, for acute leukemia in adults the survival rate is "30 or 40 per cent, at best." It's a completely different disease, she says. The good news, she adds, is that the difference is now recognized. "We are beginning to be able to tailor drug treatments for individual diseases."

Control continued...

Belch noted the presence of many highly abnormal B cells in the blood of myeloma patients and speculated that these abnormal cells eventually migrated to the bone marrow to give rise to the disease. They have since shown that these abnormal B cells are, in fact, malignant and have the identical molecular genetic rearrangement as the plasma cells of the same patient — strong evidence that they are involved in the spread of the disease. (And because these cells are, for the most part, resistant to treatments targeting plasma cells, it would explain why there is so little correlation between the destruction of malignant plasma cells and control of the disease.)

Their research has already led to a test for monitoring myeloma that is being commercialized, and Pilarski and Belch are now working on the development of new treatment protocols that will target the malignant B cells based on some unique biological properties of these cells. The researchers believe that the most promising treatment approach may be to somehow reimpose the immune system's control over the abnormal cells. "All of us may have malignant B cells, but as long as they are held dormant by regulatory T cells they are harmless," says Pilarski.

She speculates that myeloma results when somehow the T-cell control is lost. "If we could therapeutically re-establish regulatory control over the myeloma clones, patients could safely coexist with their cancer, perhaps permanently."

■ Support provided by the Medical Research Council, the National Cancer Institute of Canada, and the Alberta Cancer Board.

Numbers Game

In her search to understand why some patients seem to be resistant to some otherwise-effective cancer drugs, Wendy



Gati not only spends a good deal of time in her pharmacology lab, but she can regularly be found on the road to and from the airport.

That's because, instead of looking for answers using cells cultured in

the laboratory, the University of Alberta pharmacology professor is working with cells from patients. "Cells isolated from patients are different from cells grown in culture," says Gati, who not only works with Edmonton-area clinicians but has two dozen clinical collaborators from across Canada who send her blood samples via air cargo express. "We have a system worked out to receive and do assays within 24 hours," she says.

Gati is particularly interested in a class of drugs that are known as nucleoside analogs because they mimic naturally-occurring breakdown products originating from the nucleic acid contained in DNA. Nucleoside analogs are some of the most effective drugs for the treatment of the leukemias — a group of malignant disorders of the white cells of the blood. But they aren't perfect. "They work," says Gati, "but they don't work for everybody, and sometimes they lose their effectiveness — in some leukemias a large percentage of pa-

tients relapse because of resistance."

Working with blood cells from patients and using a unique fluorescent probe, Gati is looking at one possible resistance mechanism. "In order to be effective, the drug must penetrate the cellular membrane and enter the cell," explains Gati. To do so it has to be carried across the cell membrane by proteins, called nucleoside transporters, that mistake the analog drugs for the natural nucleosides they mimic.

"We have good evidence that the cells of different patients have different numbers of transporters," she says, "We think that patients with few transporters may respond poorly to treatment." She has also found that there is often a variance in the number of transporters in different cells in the same patient — which opens up the possibility of drug resistance developing. "The cells with few transporters survive and grow, and would repopulate the tumor, and the leukemia would come back," says Gati. "One resistant cell is all it takes."

Key to Gati's work is the special fluorescent probe that makes it possible for her to enumerate transporters in a cell within two or three hours after receiving a sample. She believes that such a probe could be routinely used to screen patients and individually tailor treatment protocols, and she hopes to soon have sufficient data to provide the ammunition to make that happen.

"We have to have statistically significant results to convince clinicians that lack of transporters is an important part of the development of drug resistance," says Gati. "It's a numbers game."

■ Support provided by the Alberta Cancer Board, the Alberta Heritage Foundation for Medical Research, the Peter Jang Research Fund, and the Cancer Research Society.

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the war on cancer?

Linda Pilarshi, an immunologist who collaborated with Belch to develop an innovative test for multiple myeloma, says that while there are global issues in cancer treatment, for the most part, therapies are unique. "There are refinements for each cancer based on where and how it grows." What works for one tumor, she says, doesn't necessarily work for another. However, Pilarshi points out that all tumors have in common a need for a copious new growth of blood vessels (the technical term for this is angiogenesis) as their lifeline for oxygen and nutrients. This may provide a "semi-global" strategy for dealing with tumorous cancers, she says. If a way can be found to inhibit the blood vessel growth, the tumor will starve (and the cancer cells won't have any exits through which they can spread to infect other parts of the body).

At present there are more than two dozen anti-angiogenic drugs in clinical trials. It illustrates how a basic understanding of cancer biology is leading to novel approaches to treatment.

As an example of recent advances in understanding cancer biology, Pilarski says researchers have now begun viewing the proliferation of cells that characterizes cancer differently. That proliferation has traditionally been seen as a wild growth of new cells; a more current focus is on the fact that the cells are not dying as they are meant to. "Unless they are healthy, cells don't die—at least they don't trigger their own death as they are intended to do," says Pilarski. "Cancer cells are defective: they don't carry out their programmed suicide."

Unfortunately, while rapid strides are being made in understanding cancer at the cellular level, the therapies resulting from those advances necessarily lag behind. "The drugs we use in our clinical research are based on work done in the laboratory 10 years ago," says Pilarski.

And, of course, not everything that looks good in the laboratory pans out. As Jean-Marc Nabholz, the senior medical oncologist who chairs the Northern Alberta Breast Cancer Program dryly points out: "We have been curing cancer in mice for 40 years. To get new drugs approved you have to treat patients."

Carol Cass believes that with the current knowledge of cancer biology and the treatments being developed—including gene therapy and novel approaches based on viruses—the tide has turned in the fight against cancer. "My feeling is that we have crossed a threshold, in the next one or two decades we will have defeated most of the common cancers."

"The reality is that we are slowly, surely winning the war."

In the meantime, until grand breakthroughs

are made, even with the most recalcitrant cancers there have been incremental advances, says Pilarski. "The treatment is much more easily tolerated and, for the most part, quality of life is better for patients living with cancer."

Cass makes the same case. "The point is not only how many people are dying, but the quality of life: many people who die of cancer live longer and their life experience is better, their treatments are better tolerated."

Cass points out that at the Cross there are between 55,000 and 60,000 patient visits each year, yet there are but 45 active beds. "Most people walk in and walk out. On average, metastatic cancer treatment is less debilitating now—that's a huge improvement that is not in the statistics."

Where we haven't made much progress, says Cass, is in changing the behavior of people. "We absolutely know that lung cancer is directly related to smoking, but we can't get people to quit—which shows how much more complex social science is."

Research oncologist Michael Weinfeld, who is developing novel methods for analysing damage to DNA, also notes the irony that, with many other killing diseases...conquered or brought into check, people are living longer and thereby increasing their odds of contracting cancer.

"You've got to die of something," says Weinfeld. "The longer we live, the greater the chances of getting cancer. The irony is that, having avoided other diseases, you might end up dying from one of the worst diseases."

The relationship between cancer and advanced age is an important one says Cass. When she looks at cancer statistics, she takes age into account and finds room for optimism. "Even with some of the more common cancers," she says, "what you see is that the age-adjusted rates are going down."

While the tendency is to think of the war on cancer being fought in research laborato-

ries and in hospital clinics, epidemiologist Colin Soskolne believes the war should be fought on a different front. More and more, says Soskolne, "it is being recognized that prevention would be the more effective strategy in the fight against cancer occurrence, cancer-related disability, and cancer death."

A professor in the University's Department of Public Health Sciences, Soskolne is currently spending a sabbatical year in Rome, where he is working with the World Health Organization, looking at global ecological integrity and its relationship not only to the health and well-being of nonhuman life forms, but also to that of humans.

Soskolne believes that research aimed at helping society move to more healthful lifestyles holds the key to effecting great declines in the impact of several major cancers. He points out that a wide body of research has successfully identified the causes of various cancer, and also the effects of early intervention. Further, he says, concentrating on prevention makes sense not only from an illness prevention perspective, "but also for cost containment purposes."

"Many of the world's population," says Soskolne, "cannot afford balanced nutrition, and the social pressures and commercial interests in other regions of the world dictate, in many instances, the lifestyles that people there follow. The transition from a diet high in fibre, fresh fruit and vegetables and low in fat and sugar, to one of fast-processed foods, fats and sugars, no doubt increases cancer risks." In addition, he says, the influence of tobacco on many different cancers and other illnesses is enormous.

"To reduce the impact of cancer," concludes Soskolne, "research targeted at health promotion, as well as at the elimination of the effects of inequity, is likely to be most beneficial for reducing the overall burden of cancer."

PHOTOS BY U OF A PHOTOGRAPHY SERVICES

ALUMNI CAMPAIGN UPDATE

The honors for the best response to an Alumni Campaign project go to the Aggies for their support of the Bar None Endowment Fund. The Fund was established by the Class of '50 in honor of Bar None's 50th anniversary last year. The immediate goal is to raise \$200,000 by the year 2000, with the interest from the fund providing much-needed bursaries and scholarships.

Bar None, the Aggie's big bash has become an institution at the University, bringing to mind parades, flapjacks, cowboy hats, horses in Quad – and of course, the big dance itself. Over the years the venues have changed



but the characteristic rural hospitality that led to the Aggies' decision 50 years ago to "bar none" – not even engineers – from their club dance has endured.

In that same "true Aggie spirit" the organizers of the Endowment Fund are proposing to bar none of their fellow agriculture grads from participating in the fund – they are aiming for nothing less than 100 per cent Aggie participation. They're not there yet, but they're making a good start, and the average gift to date is \$126.16.

Not since its inception has the University of Alberta had such a dramatic opportunity to shape its future. The five-year University of Alberta CAMPAIGN, launched on 2 April 1997, will determine that destiny and chart the course of the University for the next quarter century. The overall campaign goal: to raise \$144.65 million to support students, recruit outstanding faculty members, and provide facilities in which students and teachers can flourish.

\$21 MILLION FOR THE 21ST CENTURY

■ ALUMNI SUPPORT LOUD AND CLEAR

The alumni portion of the overall University of Alberta CAMPAIGN was launched in May 1998. Its goal is to raise \$21 million and its focus is establishing scholarships and bursaries to support U of A students of the next century – the leaders of tomorrow.

Once the alumni campaign was launched, U of A students employed by the University's Development Office began calling alumni, and after seven months of reaching out to alumni, the response has been nothing short of resounding. Overall, more than 37 per cent of the alumni contacted have made a pledge for a total of more than \$360,000 generated through the calling program. In some of the faculties, the response rate was much higher. In the Faculties of Business and Rehabilitation Medicine, for example, more than 40 per cent of those called have pledged support.

"Some of the faculties have longer traditions of giving," says Theresa Mitchell, the Development Office's manager of annual giving, who is coordinating the Alumni Campaign calling program. In the professional faculties in particular, she says, there is often a stronger sense of identity and solidarity among the members of a given class. She attributes the general success of the campaign, however, to the many good things that people have learned about the University of Alberta CAMPAIGN.

"I think people have heard a lot of positive things about the campaign in general, and this is now their chance to make a contribution," she says.

Mitchell points out that in recent years, in its annual ranking of Canadian universities, *Maclean's* magazine has painted an unflattering impression of alumni financial support for the U of A – low rankings showed only about 10 per cent of graduates making donations during a five-year period. But, she says, it seems alumni only needed to be asked to turn that dismal showing on its head.

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UNIVERSITY
OF ALBERTA
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COLLECTION PROVIDES
GIFT OF MUSIC

Alumni gifts to the University have come in many forms. Along with cash donations, there have been gifts of stocks and bonds. There have been bequests and life insurance policies. And there has been the gift of music.

Myrna Rosenbloom (Nichols), '62 BSc, of Ottawa, along with her brothers Spencer Nichols, '61 BSc(Eng), '63 MSc, and Loran Nichols, '66 BSc(Eng), recently made a donation of more than 2,600 music CDs to the University's library. The recordings were meticulously collected over a number of years by their late brother Dan Nichols, '65 BSc, who lived in Amsterdam between 1985 and 1990, the period in which many of the CDs were acquired.

This past fall, Myrna spent most of a week documenting each and every CD – all 2,618 – before sending them off to the University. "It was a labor of love and a music education," she says.

The collection primarily consist of classical music and jazz. Mozart was a clear favorite – 108 discs in all – and Brahms followed with a total of 80 discs. There are more than 1,000 jazz and blues CDs in all, including many early recordings. "It looks like he tried to collect all the recordings of the '20s, '30s and '40s," observes Myrna.

The collection is now accessible through the University's Music Library located in Rutherford North.



Alumni from the Faculty of Rehabilitation Medicine can take a bow: you are the favorites of the students working with the University's calling program.

■ IT ALL ADDS UP

The University welcomes CAMPAIGN gifts made using credit cards. That way the University gets the money immediately, and its costs are reduced an average of \$2.50 per donation. (And, if the donor uses a U of A Bank of Montreal MasterCard, the University benefits even more - see page 43)

The students began calling alumni last May, explaining that donations will help attract the best students in the country and prevent the brain drain of bright Alberta students attracted by universities that have scholarship programs five or 10 times larger. While the students enjoy talking to all alumni, Rehab Med grads are most popular with the callers. "When we call them up, they are extra friendly," says Chapman Lee, a third year science student. "They enjoy hearing about their Faculty and take a lot of pride in it."

ALUMNI CAMPAIGN HIGHLIGHTS ■ ALUMNI HAVE PLEDGED MORE THAN \$360,000 TO THE CAMPAIGN THROUGH THE CALLING PROGRAM ■ ON AVERAGE, 37 PER CENT OF ALL THOSE CONTACTED HAVE MADE A PLEDGE ■ THE BEST RESPONSE HAS BEEN TO THE BAR NONE ENDOWMENT FUND BY THE AGGIES; THEIR AVERAGE GIFT IS OVER \$126. ■ THERE HAVE BEEN TWO "MAJOR GIFTS" (DEFINED AS GIFTS GREATER THAN \$10,000) MADE THROUGH THE ALUMNI CAMPAIGN. ■ THE AVERAGE GIFT RECEIVED THROUGH THE MAIL FROM VICTORIA AND AREA ALUMNI WAS GREATER THEN \$400. ■ ONE OF THE LARGEST GIFTS MADE THROUGH THE STUDENT CALLING PROGRAM WAS MADE BY ROSS CUSHMAN, '76 BSc(AG). HE GAVE \$10,000 TO ESTABLISH A SCHOLARSHIP IN THE FACULTY OF NURSING IN MEMORY OF HIS LATE WIFE, NILA CUSHMAN, '70 BSc(Nu). ■ ALUMNI HAVE GENEROUSLY MADE GIFTS OF LIFE INSURANCE POLICIES, BEQUESTS, AND BOOKS, AS WELL AS CASH



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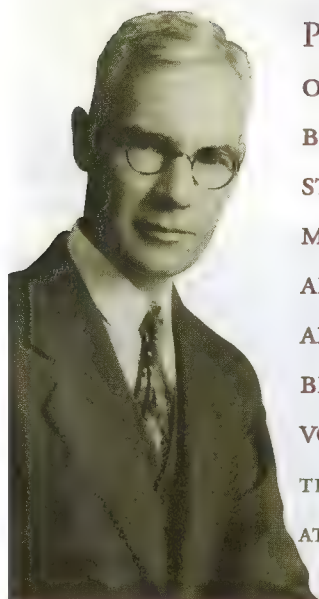
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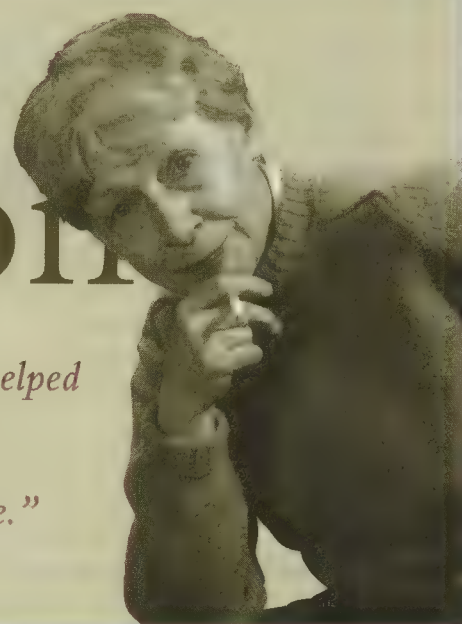
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Worthy of their high vocation

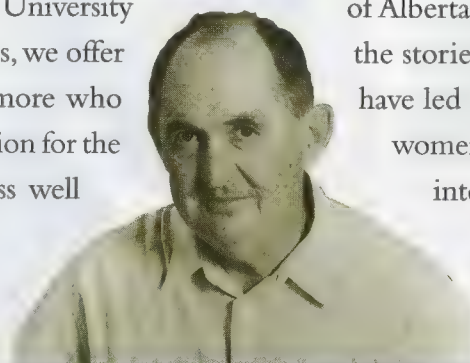
Profiles of twelve men and women who have helped shape the University of Alberta through their relentless pursuit of "whatsoever things are true."



As the University's 90th anniversary year draws to a close we offer a tribute to the great many men and women whose achievements and vision as faculty members have contributed to the University's growth and success. "If we are to have a great university it will be because great men are upon our staff," said Tory foreseeing the leadership that bright and talented faculty members - men and women - would provide through their contributions in the classroom, the laboratory, and in the community.

To celebrate the contributions of University over the institution's first nine decades, we offer are but 12; they are amongst many more who achievements shine brightly as inspiration for the help ensure the University's greatness well

of Alberta faculty members the stories of a dozen. These have led the way and whose women and men who will into the next century.



An Eye on Rock:

John A. Allan (1884-1955)

When John Allan became a professor in the early '20s, the job required calloused hands, sturdy legs and no small measure of grit – at least in his chosen discipline. In our age of computer simulations and analyses, it's easy to forget that geologists once worked mostly with hammers, diamond saws and chisels, hiking into remote areas of the wilderness to get at the stuff of their trade.

Geology could be so dangerous in those days that Allan almost lost his life surveying the bank of the North Saskatchewan river in the summer of 1925. His boat struck a rock and capsized 32 kilometres out of Rocky Mountain House, tossing \$500 worth of equipment overboard – a small fortune at the time. “Never again,” proclaimed an unnerved Allan after dragging himself from the torrent.

Yet it was precisely “Hardrock” Allan’s adventurous spirit that pointed us towards the most lucrative of Alberta’s natural resources. The prosperity enjoyed in Alberta today owes much to Allan’s studies of coal, oil and natural gas. He conducted the original survey of the Drumheller Coal Field in 1922 and published the first map of Alberta’s coal fields, today updated regularly by the Energy Utilities Board. In 1925, he published the first geological map of Alberta, a milestone in the history of the province.

You could say Allan had his eye on rock since the day he came into this world. He was born in Aubrey, Quebec on the west side of the Chateauguay valley in a post-glacial marine basin. Raised on a farm very close to the Champlain fault, he found himself enchanted by that unique structure and drifted very naturally into the study of such formations. He graduated from McGill University specializing in geology in 1907, went on to earn his master’s in science the following year, and received his doctorate from

the Massachusetts Institute of Technology in 1912. His thesis, published by the Geological Survey of Canada as Memoir 55, examined the geology and petrography of the Ice River Region in the Field, B.C. area of the Rockies. Allan fell in love with the mountains doing this research, and the passion would remain with him for the rest of his life. He was an exceptional and fearless climber; according to his graduate student, Dr. Charles Stelck, “there was no place he wouldn’t go.”

Henry Marshall Tory, the U of A’s founding president, hired Allan to start a geology department at the University in 1912. The young professor was made head of the department the following year, and held that position until his retirement in 1949. During his 37 years in the department he amassed a huge collection of fossil and mineral specimens (besides many Native artifacts), creating

Throughout his career, even when it wasn’t so obvious, Allan remained convinced Alberta’s economic future lay in natural resources.



one of the best geological museums in the country. According to U of A engineering historian George Ford, Allan “carted rocks from every area of Alberta to the upper floor of the Arts building,” overloading it to such an extent that cracks began to appear on the building’s exterior. He also meticulously documented his more than 30 field trips with photographs, and the University Archives holds almost 7,000 of his negatives.

Allan’s influence went well beyond his own department. As an instructor, his courses were considered essential to the engineer’s training. As Ford puts it, his “lectures stayed with [students] throughout their careers,” and some of them went on to discover Alberta’s vast oil fields. But it wasn’t just Allan’s excellence in the classroom that impressed students. During the '30s, when securing employment meant everything, Allan drove from Edmonton to Lake Louise to tell a student about a job in the oil patch. As it turns out, that same student went on to become involved in Imperial Oil’s 1947 Leduc oil strike, the discovery that initiated Alberta’s modern-day oil industry.

Throughout his career, even when it wasn’t so obvious, Allan remained convinced Alberta’s economic future lay in natural resources. In 1920, based on information Allan had submitted, the provincial government appointed him along with four others to form a “Scientific and Industrial Research Council,” now the Alberta Research Council. He also founded the Alberta Geological Survey as “the first provincial geologist living and working in Alberta,” says Willem Langenberg, currently with the Survey.

Allan’s survey work included huge expanses of territory in both British Columbia and Alberta. He conducted surveys at Lesser Slave Lake, as well as along the North Saskatchewan, the Red Deer, and the South Saskatchewan rivers all



the way to the Saskatchewan border. He also surveyed the land between Golden and the mountains east of Banff. As a consultant, he worked for Calgary Power Company submitting the geological profile for the Spray Lakes water power project and the Ghost River project.

Allan, who died suddenly of a heart attack in 1955, collected many honors over his career. He was inducted into the Royal Society of Canada and became president of the geological section. He served as president of Alberta's Association of Professional Engineers, and was also president of the Canadian Institute of Mining and Metallurgy. While coal was his chief interest, Allan always believed in the potential of oil as a

major resource. It would hardly surprise him that today energy accounts for one quarter of Alberta's economic production. The province is considered to have 60 per cent of the country's conventional oil reserves, 85 per cent of its natural gas, and nearly all of its heavy oil and oil sands reserves.

Allan's enthusiasm for his work never let up, even when he retired in 1949 with more than 100 research papers under his belt. But that same drive took its toll on his health in later years and he was forced to slow down. When the geographic boards of Alberta and Canada named a mountain in the Rockies after him in 1948 (it would later be a venue for the 1988 Olympic Winter Games), the man who had scaled so many summits in his life expressed regret at not being able to take in the scenery from its peak. ■

Agriculture in His Blood:

Roy T. Berg (1927 –)

The scene is familiar to every western Canadian – endless pastures full of cattle, wheat fields disappearing into the horizon under the biggest sky anywhere on earth. But something on the Alberta prairie has changed radically in the last 30 years, owing in no small measure to Dr. Roy Berg's pioneering research in animal genetics. Look more closely, and you'll see that the cows that today dot the landscape are a kaleidoscope of color rather than the uniform hues of yesterday. Put simply, this changing palette has meant better beef, and more of it.

You might say that Berg, who was raised on a farm near Millicent, Alberta, has agriculture in his blood. He was the third of four brothers to study agriculture at the University of Alberta. Since Berg's graduation in 1950, 14 more family mem-

"I had colleagues in other institutions saying, 'you shouldn't be spouting off like that or you're going to get in trouble,' but I couldn't help it. I never had sense enough to realize this was a danger. But as I look back, there were people listening to me, and that was really critical."

bers from two generations have followed in his footsteps. Counting siblings, spouses and offspring, a total of 34 Bergs have degrees from the U of A; at this year's Alumni Association celebration of U of A families, the Berg family had the most members in attendance at 29.

His strong ties with the rural community, admits Berg, have helped greatly in building bridges between the ivory tower and the farming industry. "You have to have some friends out there, because if there's no one listening to you, you have

no impact," he says. "You could do your research and demonstrate some things, but if you haven't got an audience then nothing will happen. It'll get in the scientific literature, and that's where it'll stay."

Convincing a "conservative industry" to adopt his methods, however, was anything but easy. After completing his master's and doctoral degrees in animal genetics at the University of Minnesota, Berg returned to the U of A as an assistant professor in 1955. In 1960 he established the University's Kinsella Ranch in



"You have to have some friends out there, because if there's no one listening to you, you have no impact,"

east-central Alberta and went on to show how selective crossbreeding – passing on the superior traits from a large number of breeds – could improve production by 30 to 40 per cent.

Despite the success of research at Kinsella, however, traditional pure-breeders remained steadfastly opposed to the idea of mixing breeds to produce synthetic strains. It took Berg a good 10 to 15 years of carefully controlled crossbreeding to sway industry insiders.

"At that time when he started, everyone was laughing at him," says Dr. Mac Makarechian, who worked with Berg at Kinsella. "And many producers opposed him really furiously. The pure breeders were so strong, and believed in their breed so enthusiastically, that they thought if they mixed [breeds], everything would be destroyed."

Most of Berg's cross-breeding techniques gradually became the norm in commercial breeding, winning him induction into the Alberta Agriculture Hall of Fame and the International Stockman's Hall of Fame in Houston, Texas. And yet in some ways, says Berg, "the

industry still has a long way to go." At Kinsella, for example, he managed to produce double-muscled steers with 50 per cent lean muscle tissue by live weight, compared to the average 35 per cent in the standard breeds. But because of limitations to the beef grading system, this improvement "hasn't really hit the industry yet," he says.

In addition to his work in breeding, Berg also hit the global spotlight with his research on the distribution of carcass tissues in meat animals. His 1976 book on the subject, co-authored with Rex Butterfield and called *New Concepts in Cattle Growth*, sold out twice and influenced cattle breeding around the world. Berg's findings were used to completely overhaul Canada's beef grading system and to develop Canada's pork grading system. They have also influenced modifications to grading systems in several other countries.

What sets Berg apart from many in his line of work is an ability to communicate with persuasive force. He was known as a maverick who took risks, refused to be intimidated, and told it "like it was." In a 1989 article in the University's campus publication, *Folio*, he was described as "a fearless critic of conservative thought in teaching and research at the University, and in agricultural practice outside."

"I had colleagues in other institutions saying, 'you shouldn't be spouting off like that or you're going to get in trouble,' but I couldn't help it," says Berg. "I never had sense enough to realize this was a danger. But as I look back, there were people listening to me, and that was really critical."

If you ask Berg, he'll tell you he made his greatest impact on Alberta agriculture in the classroom, especially through extension courses that disseminated new research quickly through the agricultural community. From his earliest days as a sessional instructor, Berg always put independent research and critical thinking ahead of simply absorbing information.

He graded students on presentations and extensive take-home papers, dispensing with sit-down exams. It was a controversial approach in those days, but his students thrived on it. "I had a great relationship with students," he says, "and I really treasured that ... Instead of me telling them what they needed to know in lectures, they were finding it out, but I was there to discuss it with them."

As chair of the Department of Animal Science (1977-1982) and dean of the Faculty of Agriculture and Forestry (1983-1988), he promoted the development of an entrepreneurial spirit in students – "... that desire to be one who *does* things rather than having someone else tell you what to do all the time." He was also a tireless advocate for increased public and private funding of research.

Since retiring in 1988, Berg, who lives in the parkland area east of Edmonton, has turned his efforts to environmental preservation. He is currently chair of the Beaverhill Lake Stakeholders Advisory Council, as well as a member of the Advisory Committee of the Ministik Lake Bird Sanctuary, and has been chair of the Beaverhill Lake Nature Centre in Tofield. He has also been a trustee of the Western Heritage Centre in Cochrane and currently serves on the Town of Tofield Economic Development Committee.

The scope and substance of Berg's contribution to both the cattle industry and the academy is indisputable, attested to by more than 150 papers in scientific journals, more than 200 extension papers, and countless newspaper and magazine articles. Nonetheless, the man himself would prefer you didn't sing his praises too loudly.

"Personally, I never have felt comfortable with public recognition," he once told the *Agriculture and Forestry Bulletin*. "If you need to have a plaque or a ribbon or a trophy to convince yourself you have done a good job, then you probably have not done a good job." ■

Inventing the Meaning:

Sheila Doherty Watson (1909-1998)

She wrote one of the most inspiring Canadian novels of the 20th century, but Sheila Watson hesitated to call herself a writer. Only three short stories appeared before the publication of her revolutionary work *The Double Hook*, and just one other novel (written earlier) and several short stories would follow. Yet never has a woman of so few words made such an impact on Canadian literature.

As Stephen Scobie wrote in a 1975 tribute to the reserved, self-effacing artist who appeared to live on coffee and cigarettes, "there is no point in listing the names of those who have been influenced by her; such a list would have to include every serious writer in Canada for the last twenty years." B.C. writer and poet George Bowering called *The Double Hook* "a holy book for Canadian writers," and according to English professor Frank Davey of the University of Western Ontario, it was "considered by many to be the first truly modern Canadian novel."

Beyond her contribution to literature, however, Watson was also one of the most provocative instructors in the University of Alberta's English department during the 1960s and '70s, teaching "heaven knows how many students to read with deep pleasure and very critically," says dean of Arts Patricia Clements who was herself one of Watson's students. "The most extraordinary thing about Sheila's teaching style was that she was not eloquent, she was not always coherent, she didn't give you prepackaged stuff. She got you to invent the meaning."

"Sheila would get half way through a sentence, would fix you with those blue

eyes and say, 'you know what I mean?' So you would nod and say, 'yes,' even though you rarely did," says Clements. "She would have the nerve to sail out there on the wings of a sentence before she had it entirely figured out."

In true modernist fashion, Watson was reserved about the facts of her own life. She rarely gave interviews, believing that literature should speak for itself, that the details of a writer's life only obscure and confuse the relationship between reader and text. Some of those details, however, are difficult to ignore.

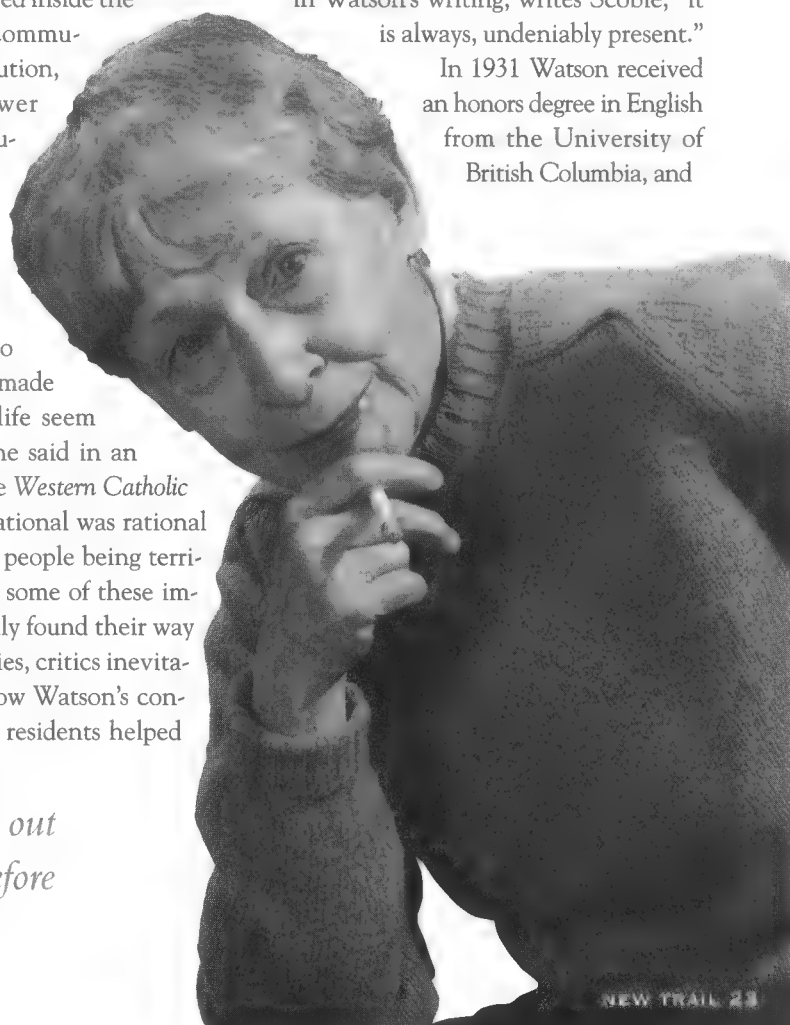
Sheila Martin Doherty was born in New Westminster, B.C., the second of four children. Her father was the superintendent of the Provincial Mental Hospital in New Westminster, and the Doherty family lived inside the "self-contained community" of the institution, housed in a tower reached by a circular stairway. For the first 11 years of her life, Sheila was exposed to a range of human nature few see at so young an age. "It made the absurdity of life seem normal to me," she said in an interview with the *Western Catholic Reporter*. "The irrational was rational ... one got used to people being terribly varied." Since some of these impressions eventually found their way into her short stories, critics inevitably pointed out how Watson's contact with hospital residents helped

forgo her imaginative universe. The Doherty children, comments Shirley Neuman, who taught with Watson at the U of A, "observed a mental disorder on the one hand and a literal mindedness on the other which may have contributed to the polarity of order and chaos which some critics have detected in Watson's work."

Apart from the influence of this unusual childhood environment, Watson had a strict Roman Catholic upbringing. She went to primary and secondary school with the Sisters of Saint Anne in New Westminster, and her first two university years were spent at the Convent of the Sacred Heart in Vancouver. This experience would also resurface later on. While religion is rarely obtrusive or dogmatic in Watson's writing, writes Scobie, "it is always, undeniably present."

In 1931 Watson received an honors degree in English from the University of British Columbia, and

"She would have the nerve to sail out there on the wings of a sentence before she had it entirely figured out."



"I didn't want to write a local-color or what you might call a regional novel,"

in 1932 obtained her Academic Teaching Certificate. Her master's thesis on 18th-century essayists Joseph Addison and Richard Steele followed in 1933. For the next 10 years Watson took on a variety of teaching assignments at grade schools in several B.C. communities. In one of these, a tiny Cariboo community between Williams Lake and Ashcroft on the Fraser River, she was put in charge of an ungraded class of nine pupils. This community would become the setting for *The Double Hook*.

Sheila Doherty married the poet Wilfred Watson in 1941 and the couple moved to Toronto after the war. There she taught at Moulton College and enrolled in graduate studies part time at the University of Toronto. She later worked as a sessional lecturer at UBC and also spent a year teaching high school in Powell River, B.C. before moving to Calgary in 1951.

In Calgary, during what she recalled as "one of the few years when I wasn't teaching," Watson wrote *The Double Hook*, which was finally published in 1959 at the encouragement of Frederick Salter, the University of Alberta's legendary creative writing instructor. Although

some of the first reviewers regarded the novel's dense language and complex symbolism as disastrous, it has since become a fixture of Canadian literature courses across the country and has been translated into several languages.

"I didn't want to write a local-color or what you might call a regional novel," Watson said in 1975. "The form of *The Double Hook* was chosen to give a sense of immediacy, of the intensity of emotion ... that threw me into the dramatic dialogue form of *The Double Hook*."

In 1957 Watson attended the University of Toronto to study the work of novelist-painter Wyndham Lewis. Her doctoral thesis was supervised by the famous communications theorist Marshall McLuhan, who was impressed by Watson's searing intellect and her ability to read literature with a fresh perspective. She completed her doctorate in 1965, but would spend a year working with McLuhan again in 1968 at his Centre for Culture and Technology.

Watson joined her husband at the University of Alberta's English department in 1961, and her reputation as a teacher and scholar began to attract nu-

merous graduate students from across Canada. In 1971 she co-founded *White Pelican: A Quarterly Review of the Arts*, with Stephen Scobie, Douglas Barbour, John Orrell, Norman Yates, and Dorothy Livesay. The journal ran for 18 issues over four-and-a-half years, establishing itself as a forum for some of the most progressive writing and graphics in Canada.

Two slim collections of her short stories were published during her lifetime, along with some of her scholarly and critical essays. After laying in a desk drawer for 50 years, her first novel, *Deep Hollow Creek*, finally appeared in 1992. More conventional in form, it is also set in the Cariboo country of B.C.

Sheila Watson died in February of 1998 at the age of 88, following complications from hip surgery. Her husband Wilfred died a few weeks later. Their passing closed the door to an important chapter in Edmonton's cultural history.

"She and Wilfred formed the unquestioned centre around which the literary life of the city revolved," writes Scobie. "Wilfred was writing prolifically – plays, poems – but even Sheila's silence commanded attention and respect." ■

Slighted by History: *James Bertram Collip (1892-1965)*

In his own lifetime, Bert Collip was never properly recognized for his role in one of the 20th century's greatest medical breakthroughs. It wasn't until 1982 – 17 years after Collip's death – that Toronto historian Michael Bliss set the record straight on just who did what in the dramatic discovery of insulin.

In his book, *The Discovery of Insulin*, Bliss showed in no uncertain terms how Collip's isolation of the extract was at least as important as any work done by the three who got most of the credit – Frederick Banting, Charles Best, and

John MacLeod. According to Bliss, the team's achievement was clouded by a good deal of petty jealousy and backstabbing, mostly on Banting's part. When it came time to bask in the glory, Collip ended up on the short end. "Had Dr. Collip been at McGill at the time instead of in far-off Alberta," argues Bliss, "he would have had the powerful friends he needed when the struggle for recognition was going on."

Born in Belleville, Ontario and educated in a one-room country school before attending Belleville High School,

Collip went on to earn his BA in 1912, his MA in 1913, and his PhD in biochemistry in 1916, all at the University of Toronto. In 1915 at the age of 23, he was hired by University of Alberta President Henry Marshall Tory to lecture in biochemistry and physiology. By the end of 1921, when Banting approached him to help develop his promising pancreatic extract, Collip had become head of the university's new Department of Biochemistry. He had also established himself as an experienced researcher with 23 academic publications, most concerning



"I experienced then and there all alone in the top story of the old Pathology Building perhaps the greatest thrill which has ever been given me to realize."

problems of blood chemistry, to his credit. Banting knew he needed Collip's chemical expertise to take his own research any further. The crude extract Banting and Best had come up with proved only partially successful in lowering blood sugar in diabetic dogs; its "mysterious something" that helped metabolize carbohydrates required further purification to be of any use in clinical trials. Collip, who was on sabbatical leave at the time, agreed to help and spent the rest of his sabbatical leave with Banting, Best and MacLeod at Toronto. All agreed to fully share credit.

But here the story takes a dark turn. It was originally Banting's idea to work on a pancreatic extract to treat diabetes, but with MacLeod directing the project and Collip at work refining the extract, Banting feared he would be shut out of clinical trials. Without consulting Collip, he pressured MacLeod to let him try his crude extract on human patients at Toronto General Hospital. The premature experiment was a miserable failure – not only did it prove embarrassing in the medical community, it also seriously undermined the team's initial agree-

ment to cooperate.

Within a week of this failed experiment, however, Collip struck gold. Working with various concentrations of alcohol he was able to isolate, or precipitate, the active principal in beef pancreas. "I experienced then and there all alone in the top story of the old Pathology Building perhaps the greatest thrill which has ever been given me to realize," wrote Collip the night of this crucial discovery.

What followed was the now-legendary confrontation between Collip and Banting during which Collip, growing impatient with Banting's competitive attitude, threatened to keep the purifica-

tion process to himself. Best later described the incident in a personal letter: "Banting was thoroughly angry and Collip was fortunate not to be seriously hurt ... I can remember restraining Banting with all the force at my command."

Differences were temporarily ironed out, however, and Collip's new extract was tested on 14-year-old Leonard Thompson, a severely diabetic patient. The results were unambiguously favourable. Although it was still to undergo further refinement, insulin, as it was now called, was a success. What had been an excruciatingly painful, devastating disease became manageable, and MacLeod and Banting were awarded the Nobel Prize for Medicine in 1923.

For the most part, history dropped Collip's name from the discovery of insulin, mainly because Banting, located at a university in central Canada, was in a better position to orchestrate the politics of recognition. According to Bliss, editors at the *Toronto Star*, who had been covering the insulin story for months, sensed there was more to it than Banting's version seemed to suggest. But the reporter given the responsibility to follow

the lead, a young Ernest Hemingway, was overworked and unhappy living in Toronto and failed to aggressively pursue it. While MacLeod shared his portion of the Nobel Prize with Collip, the gesture did little to correct the public misconception of insulin as primarily Banting's discovery.

Returning to Alberta at the end of 1922, Collip continued his research in endocrinology (the study of glandular secretions into the blood), isolated the parathyroid hormone, and demonstrated its role in calcium metabolism in 1925. To prepare himself for the clinical aspects of this work, he also managed to pick up a medical degree in his spare time. He did not remain at the University for long, but his accomplishments as a U of A faculty member were the most important of his career. "No one else has made as great a contribution to the University of Alberta as has Dr. Collip," said university President Dr. Walter Johns in 1959, "and no name is more outstanding than his."

In 1928, Collip left Alberta to chair the Department of Biochemistry at McGill University, and became dean of medicine at the University of Western Ontario in 1947, leading both schools to prominence in the rapidly developing science of endocrinology. He also invented a method of blood preservation used to provide relief to the wounded during the Second World War.

In later years Collip renewed his friendship with Banting and the two actually became close friends. Collip was considered a rapid-speaking, restless man of "intense feelings and strongly held views" but was never comfortable with personality conflicts and tended to play down his own accomplishments. Upon accepting an honorary award at the University of Alberta in 1959, he referred to his early research as "merely bathtub chemistry," adding that "I find myself completely lost in a modern biochemistry lecture ... I have never tended to be a high-powered chemist. I have tried to live my life as it comes, and to use chemistry merely as a tool." ■

Leader of the Carbohydrate Revolution:

Raymond Urgel Lemieux (1920 –)

For a hundred years chemists tried in vain to scale the “Mount Everest of organic chemistry.” But the feat came fairly easily to “Sugar Ray” Lemieux of Lac La Biche, Alberta who reached the summit by synthesizing sucrose – common table sugar – in 1953. This accomplishment amazed everyone in the world of science, but was only the first in a series of carbohydrate discoveries that would change chemistry – and medicine – forever.

In fact Lemieux’s career has been so active and expansive it’s difficult to point to any single achievement as his greatest. Having dominated his discipline for more than 40 years, he has been almost solely responsible for moving the once-marginal study of carbohydrates into the mainstream of organic chemistry. Stated simply, he revealed how carbohydrates bind to proteins, a phenomenon crucial to “everything from cancer to embryogenesis,” says fellow University of Alberta chemist, Dr. Ole Hindsgaul.

With characteristic modesty, Lemieux often claims he merely “put himself in luck’s way” to become the undisputed leader of the carbohydrate revolution. And yet, “what stands out is that he’s always 10 years ahead of his time, and he’s a moving target,” says Hindsgaul, who spearheaded a Nobel Prize nomination for Lemieux. “Whatever he’s doing, other people will be doing in 10 years, and he’ll be out of it ... I’m still doing some of what he was doing.”

It is a curious irony that one of Canada’s most distinguished scientists had no definite plans to attend university in his youth. Born in northern Alberta in 1920, he was the seventh child in a family of eight. Before entering the second grade,

Lemieux moved with his family to the Boyle Street area of Edmonton. In his autobiography, *Explorations with Sugars*, Lemieux describes the area as “an Irish-French-Ukrainian ghetto, where the main challenge was to avoid associations that could lead to reform school.” However, while working at the Jasper Park Lodge one summer he met several university students and began thinking seriously about going to university. “I thought all you had to do to get a scholarship was to have high marks,” he once remarked. “I learned from them that you also had to apply.”

During the Depression, money was always a pressing issue for a young man contemplating his career. As far as Lemieux could tell, commercial chemists seemed to make decent salaries. And since second-year chemistry students were often paid a modest sum to perform demonstrations to freshmen, his choice of major fell quickly into focus. “In those days there were only two kinds of guys coming back to Edmonton with big cars – hockey players who made the NHL and scientists who made it to industry in the U.S.,” he once told a reporter.

Lemieux graduated with an honors degree in chemistry from the U of A in 1943. His interests turned to biochemistry during doctoral studies at McGill University, where he began investigating carbohydrates and molecular structures. After receiving his PhD in 1946, he went on to Ohio State University, where he helped elucidate the molecular structure of an antibiotic called streptomycin. His first academic appointment was to the faculty of the University of Saskatchewan in 1947. He remained there two years before joining the Prairie Regional Labo-

ratory of the National Research Council in 1949. It was there that in 1953 he became the first to synthesize sucrose.

But Lemieux’s most significant breakthroughs were yet to come. A renowned scientist in hot demand, Lemieux was hired in 1954 to build a new chemistry department at the University of Ottawa, where he also served as dean of pure and applied science. While in Ottawa he did pioneering research with proton magnetic resonance spectroscopy, a technique used universally by chemists to this day to shed light on the structure and nature of carbohydrate molecules.

In 1961 he returned to Edmonton to join the University of Alberta’s chemistry department. Here he started on the path to what many consider the major accomplishment of his illustrious career



C.W. Hall Photography

— making possible the synthesis of complex carbohydrate structures called oligosaccharides. In the late '50s, chemists became aware that these structures, which coat red blood cells and body tissue cells, were essential to cell-cell recognition and indeed carried messages crucial to the control of many cellular functions. But because an adequate quantity of natural oligosaccharides (even a milligram) was extremely difficult to obtain, studying them was virtually impossible. That hurdle was eliminated, however, when Lemieux found a way to make a synthetic version of the carbohydrate.

That may not sound like an earth-shattering breakthrough, but Lemieux had enough vision to recognize its considerable medical applications — specifically the use of the synthetic compound as an artificial antigen. When attached to proteins, oligosaccharides can be used to stimulate production of antibodies in the human body. Understanding the structure of these carbohydrates has made possible new antibiotics and blood reagents, drugs to prevent transplanted or-

Firmly believing the University and province should reap the benefits of a new and promising biotechnology industry, he established three biochemical companies himself during his career.

gan rejection, improved blood typing and grouping, as well as improved treatments for leukemia and hemophilia.

As a loyal Albertan, Lemieux was never content to simply turn over the fruits of his research to a foreign pharmaceutical company. Firmly believing the University and province should reap the benefits of a new and promising biotechnology industry, he established three biochemical companies himself during his career, including R&L Molecular Research Ltd., Raylo Chemicals Ltd., and Chembiomed, which was recently taken over by Synsorb Biotech of Calgary. While in operation, these companies patented a number of antibiotic drugs and helped build Alberta's knowledge-based

economy.

Were it not for the seminal work of Alberta's own carbohydrate giant, much current research in immunology would simply not be possible, a fact underscored by numerous prestigious awards and honors. In 1954, at the age of just 34, Lemieux was elected a member of the Royal Society of Canada. In 1967 he became the first western Canadian to gain membership in the London-based Royal Society, and one year later was appointed an Officer of the Order of Canada. He has also received the Albert Einstein World Award in Science, the Hawarth Award and Medal, the Gairdner Foundation International Award, and the King Faisal International Prize in Science (the first Canadian to receive the award).

Lemieux's most recent work has focused on the role of water in molecular recognition, a hot new area of study in the '90s. According to Gary Horlick, the University of Alberta's chair of chemistry, we only now have technology sophisticated enough to take Lemieux's research to the next stage of discovery. ■



The Man Who Knew Dirt: *Robert M. Hardy (1906-1985)*

As one of his former students put it, Dr. Robert Hardy made sure Alberta became "the dirt center of Canada." For much of his career, Hardy was the country's leading consultant in soil mechanics, providing expertise for projects as far away as South America and India, and training a generation of engineers in this new science at the University of Alberta. If you wanted to know how the ground would

shift beneath your feet, Hardy was the man to call.

"It was pioneer work," says former student and colleague George Ford. In the 1940s, few people knew much about soil mechanics, except that "if you got into mud you got stuck. He was the man everyone looked to for the answer. For runways, for roadways, for dams, anything you wanted to do in which soil and materials were used. He was king, and he was always right." According to Dave Cruden, a current member of the University of Alberta's engineering faculty,

Hardy also established many of the modern construction techniques for high-rise buildings in Edmonton.

And if hard work is the formula for success, this former University of Alberta engineering dean was well ahead of the race, sometimes at the expense of his personal life. From the day in 1929 when he graduated from the University of Manitoba with a gold medal in civil engineering, Hardy worked almost every day of his life. Regarded as shy and retiring in manner, he was also the kind of man who could multi-process with aplomb.

"Hardy could talk to a staff member, plot a graph, read an article, answer the telephone, write a letter, and effectively deal with the problem at hand all at one time," writes George Ford in *Sons of Martha*, his history of the University of Alberta's engineering faculty.

Hardy joined that faculty as a sessional lecturer in 1930, pursuing post-graduate studies at McGill and Michigan during the summers. He took the only sabbatical leave of his career to study soil mechanics and foundation engineering at Harvard in 1939. It was perhaps the most crucial year of his career: he would later claim he learned more during his sabbatical than at any other time of his life.

In the 1940's, Hardy quickly scaled the academic ranks. In 1947 he was ap-

pointed professor, chair of the Department of Civil Engineering and dean of the Faculty of Engineering. While head of his department, he developed its graduate program into the largest of its kind in Canada, his reputation attracting students from across Canada and around the world. But in 1959 he left the University to establish a consulting firm specializing in soil mechanics and foundation engineering. R. M. Hardy and Associates was a venture that would have a hand in some of the most demanding construction projects of the time, spawning three related companies and later becoming part of the engineering conglomerate Agra Inc.

Edmonton, on bridges for the Canadian army on the northern highway system, and on frost-heaving problems for CNR. It was said you couldn't fly over Alberta without seeing some major landmark supported by Hardy's expertise.

Despite his accomplishments in the construction industry, Hardy never strayed far from the classroom; education meant more to him than perhaps anything else in his life's work. Looking back over this career, he once told the *Edmonton Journal* his greatest achievement "would have to be the influence I've had on engineering graduates over a long period."

"He was the man everyone looked to for the answer. He was king, and he was always right."

That influence was profound. If Hardy wasn't himself involved in a major building project, there's a good chance

a graduate of his faculty was. Under Hardy, says Cruden, who chairs the International Union of Geological Sciences' working group on landslides, the school "produced a generation of engineers at the beginning of the Leduc oil boom who built much of the infrastructure of the rest of the province."

Hardy's passion for education led him back to the University of Alberta in 1963 and he was reappointed dean. Numerous investigations of construction failures convinced him the majority of such flaws were lapses in education, and he wanted to make sure engineering graduates took only the highest caliber knowledge into the field.

But beyond the practical skills of the trade, Hardy also firmly believed in the value of a well-rounded liberal education. He encouraged students to learn business, psychology and even philosophy, going so far as to suggest social and moral issues be addressed in every engineering course. And, as he stressed in the speech that he gave when he retired from the

university in 1971, he felt it was the duty of his faculty's graduates to participate in community life and commit to a lifetime of learning – "... it must be continuing education in the truest sense, not just an upgrading of techniques."



For Hardy, the line between industry and the academic world was a thin one if it existed at all. He submitted several papers on the philosophy of the engineer's training to the American Society of Engineering Education and also made sure his research proved immediately useful, finding its way to the field as soon as results were compiled. But perhaps his greatest quality, say those who knew him, was his conviction that while no one had a monopoly on knowledge, everyone had something to say about a project.

"He would sit down on a clot of dirt and listen to the foremen of the sections to hear what they had to say about what was going on," recalls Stan Thompson, a former doctoral student of Hardy's who assisted him on the Alaska Highway in the late 1950s. "No matter how wrong you were," says Thompson, "[Hardy] never said, 'you're wrong.'" ■

Alberta's Architect of Nursing:

Shirley Stinson (1929 –)

When Shirley Stinson was a teenager growing up in Arlee, Saskatchewan in the early 1940s, a career in nursing was the furthest thing from her mind. Her hero in those days was the brilliant architect Frank Lloyd Wright, and she dreamed of someday going off to the Massachusetts Institute of Technology to follow his example.

Fortunately for Canadian nursing, Stinson's life never took that course – and yet Wright has, in a sense, remained the beacon for her career. Stinson has been described as “the architect of nursing research,” not only in Alberta, but across the country. When she is herself asked what quality best describes her contribution to the profession, she answers with conviction: “vision.”

“I do love design,” she says, “whether it’s social or academic, or [applied to] buildings, the principles are the same. Frank Lloyd Wright made structures fit the environment – that is the essence of what I was trying to do.” And so Stinson decided very early in her career to devote her talent to administration, to laying the groundwork for strong nursing research rather than becoming what she calls “an ace, capital-R researcher” herself. Largely because of her relentless promotion of her profession, Alberta became the first province or state in the Western world to earmark funding exclusively for nursing research.

Stinson received her BSc in nursing from the University of Alberta in 1953, then worked for a time as a public health nurse in rural Alberta. In 1958 she received her master’s in nursing service

administration from the University of Minnesota, and in 1969 her doctorate in higher education in nursing from Columbia. She returned to teach at the University of Alberta, the first nurse west of Winnipeg to hold a doctorate. Always a trailblazer, she was also the first nurse in Canada to receive a joint appointment in both the nursing and health sciences administration departments, and the first woman to receive the Senior National Health Scientist Award.

Most nurses in Canada would agree Stinson was responsible for changing public perceptions of nursing. “Many people didn’t know nurses did research,” especially in the mid-’70s, says Dr. Helen Mussallen, executive director of the Canadian Nurses Association from 1963 to 1981. Stinson encouraged people to see nursing as both a sophisticated practice and legitimate field of research, not merely a service secondary to medicine. Mainly because of her leadership, the University of Alberta launched a nursing master’s program in 1975, as well as a doctoral program in 1991.

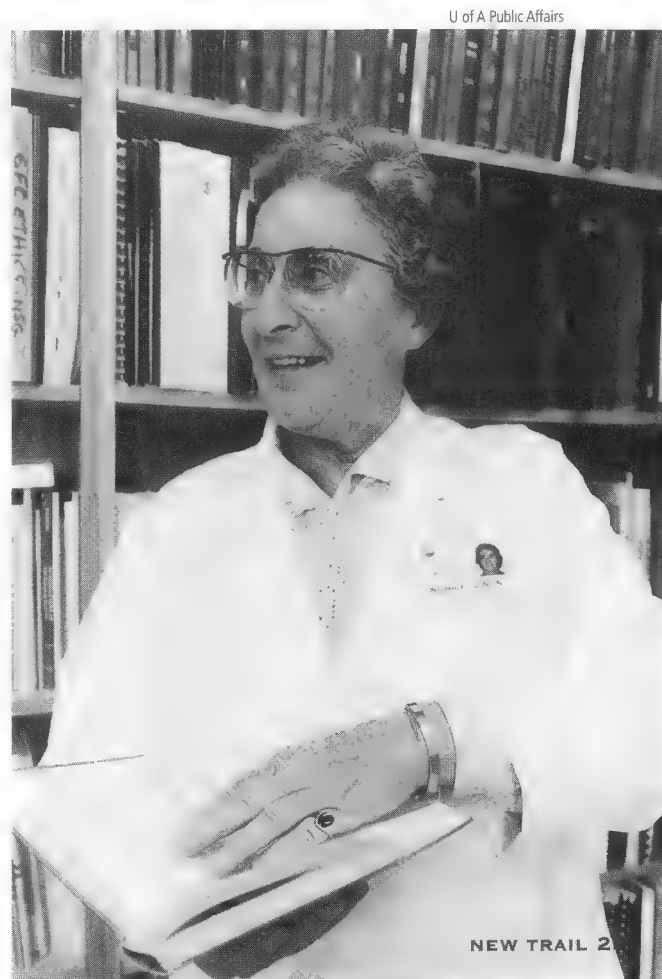
However, Stinson’s most impressive talent, say colleagues, is an ability to forge lasting connections around the world, consulting for countries as far away as Israel and Colombia. At a time when no solid international nursing network existed, she organized the first International Nursing Research

Conference in North America. It was held in Edmonton in 1986 and attracted more than 700 registrants from 38 countries. Though now retired, Stinson still gets calls in the middle of the night from people around the world seeking advice or simply tracking down a phone number.

“She is, of all the professionals I know in our field, the networker par excellence,” says Ginette Rodger, president-elect of the Canadian Nurses’ Association. “She connects everybody with everybody ... and she used that ability to the benefit of the growth of knowledge in all its forms.”

Stinson tapped her network to launch “Operation Bootstrap,” a nation-wide initiative to pressure the Medical Research Council to support nursing research and develop doctoral programs across Canada. She also served as president-

Frank Lloyd Wright made structures fit the environment – that is the essence of what I was trying to do.”



elect and president of the Canadian Nurses' Association from 1978 to 1982.

Closer to home, however, it was as instigator and first chair of the Alberta Foundation for Nursing Research (AFNR) that Stinson made her biggest impact on the profession in this province. In the late '70s, she lobbied tirelessly to secure for nursing a small slice of funding from the Alberta Heritage Foundation for Medical Research.

"At some point far into the future," she argued to government officials, "we may be in a position to secure private funding for nursing research. In the meantime, our medical colleagues, who were given some \$300 million in Heritage funding, are not being asked to sell muffins, are they? And we should not be asked to do so either."

But convincing the government to hand over Heritage dollars was not easy,

especially since nurses were far from popular at the time. There had been several recent nurses' strikes, and the government was under pressure to show a firm hand in dealing with the unrest. Sensing a negative response to their funding requests, Stinson and other nursing leaders inundated then Premier Peter Lougheed with letters of outrage. In the end, the government relented: \$1 million was set aside for nursing research, the first fund of its kind in the western world.

Stinson was the chair of the foundation from 1982 until 1988, encouraging practicing nurses to explore research projects directly related to their own work in the field. According to Catherine Gordey, a former policy analyst for Alberta Technology, Research and Telecommunications, the fruits of that research are responsible for much of the current interest in a holistic approach to

health in Alberta.

"In addition," she says, "I think the foundation gave the entire nursing profession in Alberta a higher profile. It confirmed that nurses are masters in their own right, and not anybody's servants."

In 1990 Stinson won the Jeanne Mance Award, the highest nursing award in Canada. The honor recognized a lifetime of outstanding contributions to the profession at the national level. Though officially retired since 1993, Stinson has barely slowed the pace. Her latest cause is the prevention of heart attacks and strokes through valid blood pressure assessment (which involves taking readings every three hours over seven days and having the results analysed by experts in the field) instead of the traditional "one-shot" reading used by many medical practitioners. She also continues to work the phones on behalf of international nursing. ■

Challenged by the Oil Sands

Karl Clark (1888-1966)

Karl Clark once remarked of the Athabasca Oil Sands, "they have been a taunt to North America for generations. They wear a smirk which seems to say, 'when are you going to do something?'" After devoting his life to tapping this elusive resource, Clark died just nine months before commercial production on the sands began in 1967. While he devised his hot-water flotation process in the early 1920's, a modified version of it is still used today to separate oil from the sands at the world's largest single oil deposit.

"It is usually hazardous to attribute today's successes to a historical figure," writes Bob Blair, son of Clark's closest colleague, Sid Blair, in the forward to Clark's collected letters. "But my father, who was a demanding judge of others, and

I would say with assurance that there would not be 200,000 barrels of oil per day produced from oil sands had not Dr. Clark done his job well."

Born in Georgetown, Ontario in 1888, Clark studied at McMaster University and the University of Illinois, graduating with a PhD in physical chemistry in 1915. He then took up research positions with the Geological Survey of Canada and the Bureau of Mines.

The university's first president, Henry Marshall Tory, was collecting information on the tar sands' resource potential and happened to read a research review written by Clark. Impressed with Clark's knowledge, he hired him in 1920 as the first employee of a new research body, the precursor to the Alberta Research Council.

Clark's initial research was far re-

moved from the concept of fuel, however. Having served as chief road materials engineer with the federal government, he knew the sands to be an excellent material for paving roads. But the only way to transport and market the material successfully was to separate as much of the oil as possible from the bulky sands. Clark had some success with separation in his Ottawa lab using an emulsifying agent, but it was in the basement of the University of Alberta's old Power Plant that he came up with the hot-water method still used in the petroleum industry.

The process itself seemed simple enough. It involved mixing a slurry of strip-mined, oil-bearing sand with steam and hot water and then skimming the bitumen tar off the top. It took several years, however, to develop and refine the



"He could always reduce even the most complicated subject to simple terms. He used to say that if a person was unable to explain something simply, then he probably did not fully understand it himself."

enough for refinement, and could be used to produce gasoline, fuel oils and kerosene.

Clark continued his research in two pilot plants sponsored by the provincial government, one built at Clearwater in 1930 and one at Bitamont in 1949. At Clearwater, Clark would make a crucial refinement to make separation easier – neutralizing the acidity of the water that was mixed with raw sands.

The Bitamont experiment was to prove a milestone in oil sands history. By 1950 it had clearly demonstrated Clark's process could produce clean oil. But potential investors were still wary of gambling on bitumen. In 1950, Clark's former colleague Sid Blair wrote a report for the Alberta government on the economic viability of the sands, concluding that a barrel of crude could be extracted from the sands, processed, and delivered to Ontario for \$3.10. The market price per barrel then was \$3.50. "The Blair Report," writes Clark's daughter Mary Sheppard in *Oil Sands Scientist*, "spawned the commercial industry as we know it today."

While exploiting the oil sands was a major preoccupation of Clark's career, he was also a gifted teacher. He joined the University of Alberta's Department of Mining and Metallurgy in 1938, and was head of the department from 1947 until his retirement in 1954. According to George Ford, a one-time colleague of Clark's, his students "learned more than

the technical aspects of metallurgy from him; they learned the wider significance of truth, responsibility and devotion to a cause."

Clark was one of the first to recognize that engineering students needed strong writing skills to produce clear and accurate reports, and so he offered his own writing course. Ford recalls that his older colleague was widely admired in the faculty for his patience, willingness to listen, and logical approach to argument. "He could always reduce even the most complicated subject to simple terms," writes Sheppard. "He used to say that if a person was unable to explain something simply, then he probably did not fully understand it himself."

Clark didn't live long enough to see the oil sands industry flourish. When the Great Canadian Oil Sands plant opened in 1967 at a cost of \$235 million, producing 45,000 barrels of synthetic crude per day, it was the first of its kind in the world. Today Suncor (the successor to GCOS) and Syncrude together produce about 427,000 barrels of oil per day, and both companies have multi-billion-dollar expansion plans in the works. Last April, Syncrude shipped its billionth barrel of oil.

It is surely no stretch to say this thriving Alberta industry is Karl Clark's legacy, but he would never have said it himself. In fact he used to remark that primitive methods for extracting oil from sands had been around for centuries – he merely helped move the process along. As one editor of *New Trail* once commented, "Dr. Clark is the first person we have met who could give any sensible account of the oil sands tangle, but he is modest enough to say nothing of his own important contributions to research in that field." ■

process to produce refinery-grade synthetic crude. And it took decades to convince industry that mining the oils sands was an attractive venture.

Initially, the most daunting challenge for Clark was to reproduce the results from his small experimental operation in a full-scale plant, such as the one he built at the Dunvegan Yards on Edmonton's northern boundary. There, his first attempts at oil recovery were a dismal failure. Although he and his assistants fed nearly 100 tonnes of feed into the process, much of the oil failed to separate at all. Clark closed the plant and went back to the drawing board.

It didn't take him long to figure out what was wrong. After adjusting the amount of agitation in the mixing box and discovering that weathered sands resisted separation, he opened the plant again in 1925. Shortly afterwards he sent 45 litres of his crude oil to the Universal Oil Products Company in Chicago for analysis. The company confirmed the oil was clean

A Tenacious Dreamer:

Donald Cameron (1901-1989)

He seemed the least likely in the University of Alberta's Class of 1930 to take an interest in the fine arts. His first degree was in agriculture, his master's thesis elucidated "Harvesting Methods in Relation to Wheat Quality," and according to fellow graduate Elsie Park Gowan, "his university years were innocent of dalliance with music or drama."

And yet something along the way convinced this tenacious dreamer that a country is nothing without a vibrant cultural life. As the person largely responsible for turning the Banff Centre into Canada's premier professional development centre for the arts and business, Donald Cameron was described by former University of Alberta President Walter Johns as "the greatest friend of the arts in the history of Canada." Cameron's favorite motto, first uttered by Chicago architect D.H. Burnham, provides perhaps the greatest insight into his character: "Make no small plans, they hold no magic to stir men's blood."

Born in Devonport, England, Cameron spent his early life in Hong Kong, where his father serviced British naval vessels as shipwright and engineer. One day the senior Cameron happened across CPR propaganda promising "independence on your own land" and decided to take his family to Canada in search of a better life. The young Cameron was educated mostly in a one-room school house near Red Deer with 39 children in 11 grades, but at the same time was exposed to some of the major political issues of his day. His father became active in local and provincial politics, and so Cameron no doubt learned what was on the minds of many Albertans in the 1920s – namely an acute desire for more cultural development.

Upon graduating from the U of A, Cameron began teaching with the De-



partment of Extension in 1930 under Ned Corbett, founder of the Banff School of Fine Arts and one of the most profound influences in Cameron's life. Cameron's own interest in the arts, however, didn't truly come to life until he won a Carnegie Corporation scholarship to study the folk schools of Denmark. Deeply impressed with the schools' contribution to Danish life, Cameron returned home looking for ways to emulate the Danish experiment.

In 1936 Cameron succeeded Corbett as director of the University of Alberta's extension department. In this position he developed the core of his educational philosophy, believing the University belonged first and foremost to the people of Alberta and existed to serve the social, economic and cultural life of the entire province.

"To those who remain on the farms, and in the villages and towns," he wrote in a 1945 *New Trail* article, "as well as to those who come to its cloistered halls in search of knowledge, matrimony, and what have you, it should be, in the best sense of the term, a people's university." And the more he promoted active citizenship dur-

ing his extensive travels throughout Alberta and the rest of the country, the more he became convinced the arts were the lifeblood of any community.

But it was as director of the Banff School of Fine Arts, "a centre for ideas, a centre of inspiration, and a centre for creative expression with few equals anywhere," that Cameron would make his greatest impact on cultural life in Canada. When he took over from Corbett in 1936, the Banff School, which had started on a shoestring budget of \$2,500, ran three small summer programs in theatre, painting and music. Students had to compete with tourists for accommodation and table space in restaurants, classes were held in Banff's public schools, and performances were mounted in a decrepit old theatre on the current site of the Parks Administration building. Under Cameron, the School's fine arts division embraced a wide range of courses in choral singing, weaving and design, ballet, photography, figure skating, French-language training, creative writing, radio and television production, and crafts.

In retrospect, the School's remarkable success may now seem to have been inevitable, but behind that success was always Cameron's relentless energy. "The School seems to burgeon as naturally as a ginberry bush on the mountain," wrote Gowan. "Actually, there was nothing inevitable about it ... more than once in its history, the School would have died of financial drought, unless somebody had put up a fight for its life."

And more often than not that someone was Cameron, whose drive and dedication, while never in question, sometimes made him difficult to deal with. In the words of biographer R.J. Clark "Cameron has been characterized variously as energetic, dedicated, outspoken, forthright, tough, stubborn and, sometimes, perverse. In guiding his actions,

these traits have made him at times a controversial figure. Adult education and the arts in Canada have been aided immeasurably by them."

In addition to running the Banff Centre, Cameron also served on the Canadian Senate for 14 years. He chaired the 1958 Royal Commission on Education in Alberta, one of the most wide-sweeping studies of its kind in Canadian history, and was a member of the National Film Board of Canada from 1941 to 1949.

However, of all his contributions, it is his "campus in the clouds" that is Cameron's greatest legacy. Aided first with a Carnegie grant and then with funds from former *Calgary Herald* publisher Colonel J.H. Woods, the Banff Centre quickly became a Canadian educational jewel. In 1947, after tramping around in the snow for three hours one moonlit evening looking for just the right location for a new campus, Cameron per-

"To those who remain on the farms, and in the villages and towns, as well as to those who come to its cloistered halls in search of knowledge, matrimony, and what have you, it should be, in the best sense of the term, a people's university."

suaded Parks Canada to turn over the prime St. Julien site at the base of Tunnel Mountain. There, said Cameron, after considerable "pleading and panhandling ... rattling my tin cup over the highways and byways of Canada," he built three chalets and an administrative building. Soon after, he launched comprehensive management and conference programs.

The length of the various courses was gradually extended into winter, and by 1979 all divisions were in operation year-round. When Cameron retired in 1969, the estimated capital value of the School was in excess of \$30 million. Since 1933, it has accommodated 41,000 artists. Some of its alumni or faculty over the years include such outstanding luminar-

ies as W.O. Mitchell, Buffy Sainte-Marie, Susan Aglukark, Robert Fulford, Loreena McKennitt, Oscar Peterson, Fiona Reid, Bruno Gerussi, Margaret Laurence, and Violet Archer.

The Banff Centre is today the most financially self-sufficient public post-secondary institution in Canada, receiving less than 25 per cent of its funding from government. Last year, 2,400 artists, 1,600 managers and 25,000 conference guests attended one of the Centre's four divisions. During their stay at the Centre, almost every one of them would have set foot in the building at the heart of the Centre, the building memorializing the man whose bold plans were the magic behind the Centre's success – Donald Cameron Hall. ■

In Perpetual Motion: *W.G. Hardy (1895-1979)*



George Hardy did almost everything with astonishing speed and intensity, leaving those around him in the dust. He finished public school at age 10, taught himself Latin "just for fun" by age 11. He learned Greek while working as a "hired hand" on his father's farm by 16, and also picked up speed reading on his own, settling in at an average pace of 300 pages per hour "with complete comprehension." He later claimed to have written one of his best known short stories, "The Czech Dog," in just 25 minutes. "I write very fast," he said at age 84. "I never pretended to be a genius, but I have a talent for writing. I know my stuff."

Described by a former colleague in 1973 as "possibly the most popular lec-

turer the University of Alberta ever had," the renowned classics professor rose to international prominence as both a scholar of ancient history and as a writer of novels, short stories and radio plays. He also served three terms as president of the Canadian Authors Association. And, if all that weren't enough, Hardy was a key mover and shaker in the world of amateur hockey as president of the Canadian Amateur Hockey Association, the International Ice Hockey Federation, and the Ligue Internationale de Hockey sur Glace.

Born on a farm situated near Oakwood, Ontario, Hardy was one of seven children. After serving 14 months with the Canadian Expeditionary Force during the First World War, he received

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and package my time.”*

a medical discharge for what he called “a bulged-out heart” and took the opportunity to continue his education. He obtained a BA (with the Governor-General’s Gold Medal) in 1917, and then went on to receive an MA from the University of Toronto and his PhD in Greek and Roman literature from the University of Chicago in 1922.

In 1920 Hardy joined the classics department at the U of A and remained there until his retirement in 1964, serving as head of the department for 26 years. Perhaps his most acclaimed scholarly work, *The Hellenica Oxyrhynchia and the Devastation of Attica*, appeared in 1926. Two years later he published his first novel, *Son of Eli*, in serial form in *Maclean’s Magazine*.

He went on to publish numerous short stories in magazines such as *The Canadian Home Journal*, and *Toronto Star Weekly*, in Canada; *Colliers* and *The Saturday Evening Post* in the U.S.; and the *Strand* and *Windsor* magazines in England. By the 1950s, Hardy’s carefully researched historical novels were selling rapidly in paperback and foreign editions, becoming, in the words of former University of Alberta president Walter Johns, “classics of our own day.” The vastly popular *City of Libertines* alone sold more than 750,000 copies.

“Immigrants reaching Alberta were almost awed to learn that Dr. W.G. Hardy lived here,” wrote John Patrick Gillese in a tribute to Hardy for the Canadian Authors Association. “One Jewish youth told me how he had pored over *Father Abraham* in Edinburgh University. A German engineer had read *All the Trumpets Sounded* in the Dutch translation – the only novel by a Canadian he

could find before coming to Canada.”

According to Gillese, Hardy’s novels enjoyed unusual success because he was able to escape the academic’s often stodgy approach to language during his flights into the imagination. “He deliberately abandoned the ‘literary’ style to which professors in particular seem doomed, in favor of the brisk, colorful and contemporary style that readers were willing to accept.” Some of that briskness and color – particularly his realistic depictions of sex in *Father Abraham* and *Turn Back the River* – caused a good deal of controversy in an age less liberal than our own. But the historian had done his homework, insisting with conviction that he “portrayed those people as they were.” He felt there were good reasons for exposing the excesses that destroyed the Roman empire and that, he believed, threatened moral decline in the modern era.

This 20th-century renaissance man was blessed, he claimed, with a natural ability to “package my mind and package my time.” He would typically come home from work in the late afternoon to spend time with family, then devote evenings to hockey (or Edmonton’s Little Theatre), and finally get down to the serious business of writing around 11 p.m. when everyone else was going to bed.

“In my younger days, I could do with a few hours’ sleep at night and one good night’s sleep per week,” he said at age 79. “Now I’m lazy – I went to bed at 1 a.m. yesterday and didn’t get up till 8:30 a.m.”

Hardy would dutifully set himself a daily writing quota, getting up in the middle of the night if necessary to meet it. Gillese recalls Hardy’s remarkable tenacity after he suffered a serious heart attack in 1954: “After a week in which the doctors had their way, George had his – a telephone by the bedside, a board on which to scribble, and an assistant to take his dictation and bring him the reams of copy to be edited and correlated. He met the publisher’s deadline. (Needless to say, he recovered completely).”

As a member of the Edmonton Sports Hall of Fame, Hardy will always be remembered for his devotion to sport: “... that’s the Greek way of doing things,” he said. “I didn’t want to become a straight academic.” In his younger days he played collegiate hockey, tennis, and soccer, as well as some baseball and basketball. He coached the University of Alberta’s hockey team to several championships in the 1920s and spent much of his life promoting amateur hockey and decrying the harmful encroachment of professionalism on the pure pursuit of excellence.

*“In my younger days,
I could do with a few hours’
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night’s sleep per week.”*

“Once professionalism steps into the picture, the quality of sportsmanship often tends to deteriorate,” he once said. He compared modern “clutch and grab” hockey in North America to the advent of professional sports in 4th-century-B.C. Greece, when athletes “were urged to win at any price.”

By the end of his life in 1979, Hardy’s track record was nothing short of staggering. Besides seven historical novels (his fictional account of the life of Caesar, *The Bloodied Toga*, was published posthumously) and nine histories, the prolific writer produced more than 200 short stories, 100 articles, 1,000 radio talks and five radio plays. With his widespread success, the laurels came fast and furiously, including, among others, induction to the Order of Canada, the Province of Alberta Award for Excellence in Literature, the University of Alberta National Award in Letters, and the Centennial Medal of the Government of Canada. ■

Devoted to Music:

Violet Balestreri Archer (1913 –)

Violet Archer's life has been consumed by music. One of Alberta's best loved composers, since her teenage years she has never been able to imagine not thinking in notes and scales, always far too busy to consider details like marriage and children.

At 85 Archer remains as productive as ever, with 330 compositions of all kinds to her credit and more on the way.

"Violet Archer has been one of Canada's most prolific and most performed composers since about 1950," says Fordyce Pier, chair of the University of Alberta's music department. "Her music is characterized by great craft and an often almost overwhelming intensity and intellectual rigor."

Archer's peers say she, more than anyone else, cleared the way for female composers in this country at a time when they were not taken seriously. But she herself has no recollection of blazing that particular trail. Her feeling has always been that music doesn't recognize gender, so why should she?

"I was so deeply involved in music that I couldn't spend time worrying about not being a man," she says. "The fact was I seemed to get along fine with male composers and male musicians."

Archer began playing piano at the age of eight, and supported herself by accompanying voice teachers from the age of 17. It wasn't until she went to McGill University to study music in the 1940s, however, that she got the itch to compose. The music faculty dean (who also conducted the Montreal Symphony Orchestra), tried to dissuade her from such a traditionally male pursuit but was obviously struck by her natural talent.

"I took my first orchestral piece to him, shaking in my boots," she told *Encore Magazine* in 1982. "He looked at it and said, 'well, perhaps we [the Montreal Symphony] can play it' ... I just about collapsed on the spot!" The *Scherzo Sinfonico* pre-



miered in Montreal in 1940, marking the start of a brilliant composing career.

Between 1940 and 1947, Archer played percussion for the Montreal Women's Symphony Orchestra and became enchanted with the complexities of rhythm. After graduating from McGill, she went on to study with two of this century's most celebrated composers – with Bela Bartok in New York in 1942 and with Paul Hindemith at Yale University in the late '40s. She calls this period of her life "miraculous," adding that, to this day, "a vivid remembrance of those two teachers" comes to her mind frequently.

She was deeply impressed with Bartok's orchestral arrangements of Hungarian folk music and found him surprisingly receptive to her creative ambitions. "He didn't terrify me," she says. "He was very pleasant and spoke very quietly."

Archer would follow Bartok's example by drawing on native Canadian folk

songs for her own orchestral pieces. In her personal favorite symphony, for example, the 1987 *Evocations*, she incorporated Inuit and West Coast Native themes into alternate movements.

By far her most profound influence, however, was Hindemith. According to fellow composer Malcolm Forsyth, her music changed notably after her Hindemith years at Yale. She was now clearly in the free-toned (moving freely among keys) style of the 20th century.

"She rather worshipped the man and everything that he had taught her," says Forsyth. "And she always taught according to the precepts of Hindemith at the U of A. Her music has that kind of sound – slightly hard-edged ... while still very melodic, and traditional in the sense of rhythmic patterns. This really forms the central part of her work."

In the 1950s Archer worked in the U.S., first as resident composer at North

"I was so deeply involved in music that I couldn't spend time worrying about not being a man."

Texas State College, one summer as visiting professor at Cornell, and then as professor of composition at the University of Oklahoma. Besides writing more than 60 works during this period, she also diligently promoted Canadian music south of the border.

Archer returned to Canada in the early '60s, joining the U of A's music faculty in 1962 and establishing a teaching reputation every bit as impressive as her composition record. Her students use the phrase "tough love" to describe her pedagogical style.

"Entertainment and flattery were not on her agenda," wrote Dr. Brian Harris in a tribute to his instructor. "She was a strict disciplinarian, and fools, particularly lazy ones, were not tolerated gladly. From her we received an understanding of the vast riches a lifelong devotion to music had to offer. I don't know of any student from the 'Archer years' who is not professionally active in music in some form today."

During her 16 years at the University of Alberta, Archer never lost sight of the need to promote local talent. She suggested the formation of the Edmonton Composers Concert Society, and spent many years on the theory committee of the Canadian University Schools of Music. Through the Society of Canadian Folk Music, she did much to raise the profile of Alberta's folk music tradition. She remembers the society when it was "thriving and important" and laments its demise about 10 years ago. "It fell apart and never got together again, and I think that's a shame," she says.

No doubt this recipient of six honorary degrees will be remembered 50 years from now for the "sheer weight" of her body of work, says Forsyth, which has so far been played in no less than 32 countries. She has composed symphonies, operas, choral pieces, songs, concertos, sonatas, and chamber music, and has written for almost every instrument in the orchestra. Since the beginning of her ca-

reer, she has also taken a keen interest in composing simple works for children, something not every composer is willing to do. She delights in the fact that two such early works, *10 Folk Songs for Four Hands* (1950), and *Three Scenes for Piano* (1946) are still hugely popular among piano teachers.

"She decries the fact that so few composers will actually write a simple piece for clarinet or bassoon or something," says Forsyth. "Young kids who play these instruments never get to understand the idioms and language of 20th-century music. So that's been a very big thing in her life."

Unfortunately, says Forsyth, the Hindemith style upon which Archer relied so heavily has gone out of fashion since the 1960s and her work is now less well-known than it could be. It may take another 50 years, Forsyth says, for the world to rediscover the music that has touched so many Canadians. ■

Visionary Without Compromise: *Robert Orchard (1909-1991)*

It's no secret Edmonton's enjoyed an exceptionally vibrant live theatre scene in recent decades, boasting some of the country's most exciting and inventive stage productions. As Studio Theatre celebrates its 50th anniversary this year, it's fitting to remember such success doesn't happen by accident. It often begins as an audacious idea in the mind of a maverick, growing to fruition as the rest of the world catches on.

In the years following the Second World War, it was Robert Orchard who recognized that the city, province and university could produce live drama worthy of national attention. The founder of Studio Theatre arrived in Edmonton when there was precious little stage life,

"He was a breath of fresh air here... a bolt out of the blue"

wielding ambitious plans for a university-based professional theatre centre that made everyone a little nervous.

"I'm sure he was the first person who spoke that way seriously," says Edmonton theatre historian Dr. Diane Bessai. "He was a breath of fresh air here ... a bolt out of the blue," says Bessai. "He really opened up all sorts of possibilities that the students of that day were very alert to."

By the time he took over as first chair of the University's new drama department at age 36, Orchard had lived a life steeped in the fine arts. Born in

Brockville, Ontario, he grew up surrounded by family members who painted and played music, and decided early and "naturally" to pursue a career in the theatre. While he considered Ontario his home, he attended public boys' school in England, where he recalled "getting up plays in the house" with a friend. "We used to do the women's parts between us."

Orchard took his MA in history and English at Cambridge, where he was heavily involved with the Amateur Drama Club. He spent five years in England working on the stage, developing an interest in leftist politics, and helping to establish two workers' theatres in London. After the outbreak of the Second World War, he left England for New York



Orchard (right) Playing checkers during filming of *The Experts* in September 1987. John Travolta looks on.

courtesy of Rosalind Orchard

to study at what he called a “left wing theatre school.” There he fell under the influence of the dramatic rage of the 1940s, the “Method” approach to acting and directing espoused by Russian director Constantin Stanislavski and developed by the Group Theatre.

With his actor’s gift for illusion, it is fitting that Orchard spent some time with the Canadian Army Camouflage Corps during the Second World War. He also served an apprenticeship with Hart House Theatre in Toronto, directed Winnipeg’s New Theatre Group, and taught English at the University of British Columbia. By the time he arrived in Edmonton in 1946, he was convinced Canada needed a strong regional theatre program to stage professional productions of the best Canadian plays. Edmonton seemed as good a place as any to give it a try.

As the University saw it, Orchard was hired to equip education students with the skills necessary to teach high school drama. Almost from the start, however, he pushed for more than “merely giving a dramatics training to teachers.” He saw no reason why his theatre couldn’t become, as he put it, “a sort of theatre centre, servicing first and foremost the University and after that the city of Edmonton and the province as a whole.” Orchard envisioned a kind of healthy co-operation between amateur and professional theatre that would benefit everyone in the region. At its best,

such a centre would interpret larger national and international movements in drama through a local lens, exploiting the talent of local writers and actors.

The cramped space initially assigned Orchard in Convocation Hall, however, was far from adequate to carry out his lofty plans for at least five productions per season. As he once remarked in an interview, there “seemed to be about two feet from the back wall to the front of the stage,” a pervasive “moralistic” atmosphere in the building, and very little heat in winter. It didn’t take him long to discover the metal huts (roughly located in the centre of campus) vacated after the war, and by 1948 he had converted one of them into a respectable 150-seat theatre. In March of the following year the new “Studio Theatre” was born. It began with a bill of one-act plays, including one by Orchard himself called *The White Man and the Mountain*, and another by local writer and university alumna Elsie Park Gowan called *Breeches from Bond Street*.

“Orchard was an extraordinary man,” says Carl Hare, acting chair of the U of A’s drama department. “The productions were not necessarily polished but were very powerful and exciting. His whole idea of starting something that allowed a whole range of dramatic literature to be seen on stage without compromise is what established the department from the beginning on the right track.”

Like many visionaries impatient to

convert their dreams to reality, however, Orchard met with opposition. Donald Cameron, director of the Banff School of Fine Arts, felt establishing a strong Edmonton theatre centre would detract from his own program. And according to theatre historian Moira Day, University administrators were also far from convinced public productions would give students the best possible training. As far as the University was concerned, such a program would be too costly, too exhausting, and would exclude a large number of students better served in the classroom. During the 1949-50 season, Studio Theatre was able to mount just one production, and Orchard was sufficiently frustrated by the slow pace to discuss his resignation with the dean of Arts.

Orchard had the good fortune, however, to work with the exceptionally talented Elizabeth Sterling Haynes, a director of sound practical mind and extensive community connections. She was able to elicit enough support to keep Studio Theatre alive and thriving, so that between 1949 and 1953, a total of 15 plays were staged including *Macbeth*, *Othello*, Pirandello’s *Henry IV*, O’Casey’s *The Silver Tassie*, and Chekhov’s *The Cherry Orchard*. Studio Theatre was well on its way to becoming a permanent University – and city – institution.

By 1955, Orchard felt it was time to move on. “I think there was definitely a sense that (administrators) wanted a more academically founded theatre in University. So my usefulness, whatever it was, was over.” He left Edmonton to unsuccessfully start a new studio theatre in Vancouver and later travelled around B.C. collecting an oral history of the province for CBC Radio called “People and Landscape.”

Although Orchard was only in Edmonton for nine years, the legacy he left behind was profound. Studio Theatre persisted and today is central to one of Canada’s most prestigious programs for the training of aspiring actors. ■

things worth knowing

THE SEQUEL

To help celebrate

the University's 90th anniversary, our last issue we ran a feature entitled "90 things worth knowing about the U of A." Judging by our mail, many of you found the feature of interest. Some of you wrote to provide additional information, others expressed appreciation, some had questions, and some of you pointed out errors – so here are some more things worth knowing.

■ **Which Donald Cameron?** • Pass the dunce cap! We goofed outright. Cameron Library is not named after the late Senator Donald Cameron (read more about him in this issue), but after Donald Ewing Cameron, the University librarian from the end of the First World War until 1945, when he assumed responsibilities for advising veterans. In *The History of The University of Alberta, 1908-1958*, Professor John MacDonald writes: "Mr. Cameron was a man of insatiable intellectual curiosity, ranging over the whole field of knowledge... For nearly three decades, no figure around the University was more familiar or better loved than that of 'D.E.'" There is, of course, a third Donald Cameron who figures prominently in the University's history: D.E.'s son, **Donald Forbes 'Tim' Cameron**, '47 BA, '49 MD, who was dean of Medicine from 1974 until 1983.

■ **But for the Grace of God** • For those of you who asked, we are pleased to provide the words to the University's original grace. To recognize the significant contributions to the welfare of the University made by individuals of a great variety of religious backgrounds, the grace now in use for University functions is not specific to any religion. The original grace, however, reflected the University's origins in an almost entirely Christian community.

Fac, Deus Noster, ut hoc cibo refecti, Quaecumque Vera constantius sequamur, secundum Jesu Christi spiritum. Amen
(Grant, O God, that being refreshed by this food, we may more steadfastly follow after whatsoever things are true, according to the spirit of Jesus Christ.)

Thanks to **Eileen Jorgans**, '45 BSc(HEc), who was a dietician in Athabasca and Pembina Halls in 1946-47, for sending us a printed copy of the original grace.

■ **Some More Names** • To the list of campus buildings named for individuals from the University's history, we can add: **Avadh Bhatia Physics Building** – for Avadh Bhatia, longtime professor who did pioneering work in theoretical nuclear physics; **Newton Building** – for Robert Newton, a dean of agriculture and later the University's fourth president; **Scott Health Sciences Library** (part of the Mackenzie Health Sciences Centre) – for John W. Scott, former dean of the Faculty of Medicine.

■ **We Shoot, We Miss** • While we had been led to understand that the return of women's ice hockey at the University came after a 70-year hiatus, we now know that there were women's hockey teams representing the University (although not in intercollegiate competition) at least until the beginning of the Second World War. **Mary Wallace (Hewitt)**, '37 BSc(HEc), not only wrote with her

memories of competing on the women's varsity ice hockey team in 1936-37 ("We played Edmonton and Red Deer teams, and then in February 1937 went to the Banff Winter Carnival – competing with the Calgary Grills.") but sent a photo.



■ Stack of Hots •

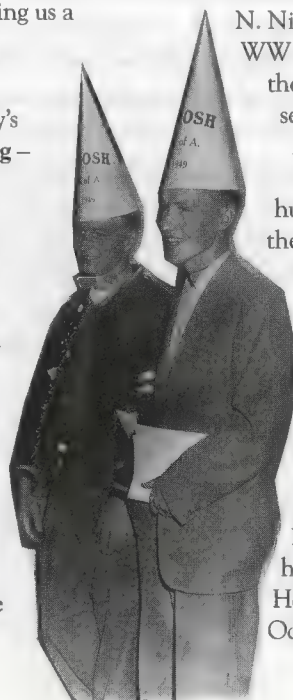
Writes **Ross Norstrom**, '62 BSc, '66 PhD: "I especially enjoyed seeing a picture of the Tuck Shop, which for the life of me I couldn't picture, in spite of having spent half of my undergraduate life in it, it seems. One thing that sticks in my mind about the old Tuck was a standard order hollered by the waitress, 'stack of hots three (or four, or five) high.'"

■ **Not So Massive After All** • Israel Switzer of Toronto saw a friend's copy of *New Trail* and wrote to set us straight. We'd described the University's first computer, purchased in 1957, as a massive machine. "Not quite right!" writes Switzer. "I sold that computer to the University and trained University staff in programming and maintenance... The LGP-30 was, however, not a 'massive machine' by the standards of the day. It was the size of an office desk – quite small for that time."

■ **A Lesson in Shed Nomenclature** • **Frank Haley**, '51 BSc, '53 MD, '57 MSc, '95 BA, wrote about the design for the distinctive sheds that sprung up on campus after the Second World War:

"The 'round-roofed sheds' were developed by Lt-Col. Peter N. Nissen and adopted for use by the British Army before WW 2. (Nissen died in 1930.) The American Army, after the U.S. entered the war, imported some for trials, and set them up at Quonset Barracks. True to the American tradition of not recognising better inventions, the Americans called them 'Quonset huts.' Those of us who used them in England knew them as 'Nissen huts.'"

■ **A Strathcona Plain Mistake** • Frank also set us straight about the University's first convocation. Faced with one source that said that historic event took place at the Strathcona Opera House and another that gave the venue as the Princess Theatre, we assumed the present-day Princess was formerly the Opera House. Not so, writes Frank, referring to the *Strathcona Plain Dealer* of 14 October 1913: "The first Convocation of the University was held on 13 October 1908 in the Strathcona Opera House. That was the designation of the IOOF's Oddfellows Temple, NOT the Princess Theatre."



TRAILS

FOLLOWING THE FOOTSTEPS OF UNIVERSITY OF ALBERTA ALUMNI

Spots Suitcase by Marilyn Levine Clay, 22 x 74 x 46 cm



photo by Richard Sargent

She originally trained to be a chemist, but **Marilyn Levine**, '57 BSc, '59 MSc, has made her mark in clay. Her clay "super objects" are considered among the most intriguing works in 20th century ceramics. Levine, who now lives in Oakland, California, was recently in Saskatchewan, where she attended the opening of a retrospective of her work at Regina's Mackenzie Gallery. The retrospective runs until mid-February in Regina, after that it will travel to various North American locations.

UNIVERSITY OF ALBERTA ALUMNI ASSOCIATION

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ALUMNI ASSOCIATION PRESIDENT'S MESSAGE



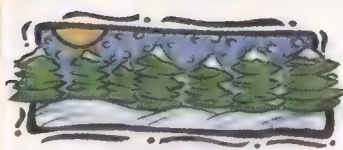
The green and gold foliage of early October is a fitting backdrop to the University of Alberta Reunion

Weekend. I had almost forgotten the beauty of our campus with its stately trees and impressive architecture. As my wife Gay and I wandered the campus over the weekend, we met many graduates admiring the setting around the Arts Building, Athabasca Hall, the Power Plant, and the Dentistry/Pharmacy Building, remnants of a more classical era in architecture.

Reunion Weekend was a wonderful success with a record number of alumni enjoying reconnecting with old friends and old memories. The campus was vibrant with activities in every faculty, at Alumni House, and at the Faculty Club. The gala dinner and dance at the Shaw Conference Centre was sold out, and the unforgettable Tuck Shop cinnamon buns disappeared in short order at Alumni House on Saturday morning. The Golden Bear football club staged an epic battle at Commonwealth Stadium and excited the fans with a closely fought victory over the Manitoba Bisons. On Sunday morning, graduates from 50 and 60 years ago were guests of President Rod Fraser at a special brunch.

The enthusiasm and fun enjoyed by alumni make the work of Alumni Council and the Alumni Affairs Office very rewarding. Thanks to the many class organizers who were the backbone of the Weekend's success. Most returning alumni were the product of a smaller more collegial campus than today's graduates know; however, the university experience remains a defining period of our lives. Reunions help rekindle many fond, deep-rooted experiences.

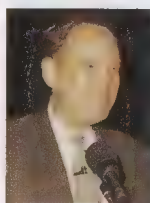
Ralph Young
Alumni Association President



EVERGREEN

Tapscott Gives First Distinguished Alumni Award Lecture

Featured speaker at the Alumni Wall of Recognition Induction Ceremony and Lecture on 1 October 1998 was



Don Tapscott,
'78 MEd.

One of the recipients of the 1998 Distinguished Alumni Awards (see

page 49), Tapscott is an internationally recognized authority on information technology. In recent years he has served as a consultant to various governments and some of the world's largest corporations.

The best-selling author of *Growing Up Digital*, Tapscott kept his audience captivated with his predictions about the future of education and technology. According to Tapscott, "for the first time in history, children are the authority on a central issue facing society." Tapscott described how children – dubbed the "net-generation" in his book – are virtually "bathed in bits" from an early age. Three quarters of children

over the age of six know how to use computers, he said, adding that computers are penetrating homes as fast as the television did in the '50s. In his lecture, Tapscott outlined how this technology-savvy generation is having an impact on education, work, and commerce. He predicted the full impact of the "net-generation" on society is yet to be felt.

Tapscott received his master's degree from the U of A in 1978, focusing on research methodology. He is the president of New Paradigm Learning Corporation and the author of *The Digital Economy*, *Paradigm Shift*, and *Blueprint to a Digital Economy*.

Wouldn't It Be Nice...

With 1998 soon to be only a memory, it's time to look ahead to 1999 – which for many alumni will be a special anniversary of their graduation.

Are you a graduate of the class of '49, '54, '59, '74, '79, '89, or '94? If so, you might have given some thought to the possibility of a class reunion for 1999. Wouldn't it be great to get your class together, to see

some old friends ...?

To help you get started, the Alumni Association is offering some advice on how to get your classmates involved and how to plan a reunion you will all remember.

Join alumni from other reunion classes, Alumni Council members, and U of A staff from various faculties on campus at reunion organizers' workshops offered by the Office of Alumni Affairs on 25 March and 29 April 1999.

Learn valuable tips on how to plan a successful reunion, meet other reunion organizers, and find out what kind of support is available from the Office of Alumni Affairs and other offices and services on campus.

For more information or to register for the free sessions at Alumni House, contact the Office of Alumni Affairs.

Thanks, Terry

The Alumni Association has reached into its past to say "thank you" to Dr. Terry Flannigan.

Flannigan who, as the University's associate vice-president (external affairs), was the chief architect of the extremely suc-

Association Calendar

Branches

Hong Kong

30 January 1999
3:30 Mahjong Games And Karaoke,
6:00 AGM, 7:30 Dinner
Szechuan Garden Restaurant
RSVP: Catherine Kwan e-mail
UAAAHK@netvigator.com
Fax: 2529-8115

Singapore

6 February 1999
1-3 pm Recruitment and information
session for students and parents,
7:30 Dinner.
e-mail Kohsm@am.nie.ac.sg for
more information

Japan

9 February 1999
Call Jennifer Spanbauer at 3475-
1171 ext. 18 for more information.

New York

4 February 1999
7th Annual Pizza & Skating Party
Central Park, Wollman Rink
Call Marilyn Parker at
838-8522 or e-mail:
parkerma@juno.com

Phoenix

20 February 1999, 11:30 a.m.
2nd Annual Alumni Brunch
Paradise Valley Country Club
Call Norm Nichol at
396-4491

Tampa

22 February 1999
Annual All-Canadian
Universities Alumni Event
Watch your mail for details

Banff/Canmore

Early March 1999
2nd Annual Alumni Event
Call Bert Dyck at 673-2548

Grande Prairie

12 March 1999
Annual Dinner
Call Trenton Perrott at 532-5340 or
e-mail tperrott@incentre.net

London, U.K.

25 March 1999
Alumni Reception and U of A



▲ Terry Flannigan Gets "topless" in support of The United Way

successful University of Alberta Campaign, retired in late November. To express gratitude for his service to the University and support of the Alumni Association, Alumni Council conferred upon him an honorary life membership in the Alumni Association.

Such recognition, although long provided for in the Association bylaws, is something of a singular honor: it is the first honorary life membership ever granted within the memory of anyone currently active in the Association.

Flannigan was warmed by the honor – which was perhaps providential for a few days later he lost the protection from the cold offered by his hair. On Friday, 13 November, Flannigan had his head shaved, something he had committed to do if the

University's internal United Way fund drive went over the top. This year U of A staff and students contributed more than \$268,000 to the fund, surpassing the \$225,000 goal.

Branching Out in Support of the Uof A

The annual Branch Presidents' Seminar was held on campus on 2 October in conjunction with Reunion Weekend '98. A record number of alumni volunteers attended this event, sharing advice as to how to involve alumni with the University and its goals, and getting a glimpse of the University's student services. Two alumni, in particular, went far out of their way to be part of the event: William Yung, '91



▲ U of A President Rod Fraser and Alumni Association President Ralph Young (right) thank William Yung, '91 BCom, for the work that the University of Alberta Alumni Association Hong Kong is doing on behalf of its alma mater.

BCom, who came all the way from Hong Kong, and Marilyn Parker, '61 BSc(HEc), '66 BEd, from the New York branch.

At the seminar, the Alumni Association's branch trophies were handed out. The Burgess Trophy, established in 1959 to honor the best all-round alumni branch outside of Alberta, went to the Hong Kong Alumni Branch, the largest overseas branch with close to 1,000 alumni members. It was a way of saying thank-you to the countless volunteers who ensured the University of Alberta's first international convocation went off without a hitch and with a great attendance.

The G.B. Taylor Award recognizing the most active Alberta branch went to the Calgary Branch. Formed in 1924 it is the Association's oldest and largest branch. In recent years it has begun a tradition of celebrating alumni pride at its annual event at Spruce Meadows, one of the world's finest equestrian show-jumping facilities.

CLASS REUNIONS '99

Reunion Weekend '99 (RW99) will be held 30 September – 3 October, 1999. For more information on class reunions call Sue at 492-6075.

Year & Class/Date & Place/Contact:

- All Mechanical Engineering/D. Dale
- '29 All faculties/RW99/Alumni Office
- '39 Educ(Dip)/RW99/V. Smith
- '39 Eng/RW99/H. Johnson, J. Fulton, S. Davis
- '39 Med/RW99/G. Morton
- '49 Ag/RW99/G. Nelson
- '49 Bus/RW99/K. Fowler
- '49 Civ Eng/RW99/D. Usher
- '49 Home E/RW99/M. Matheson, S. McLaggan
- '49 Min Eng/RW99/W. Lindberg
- '49 Nu(Dip)/RW99/M. Musto
- '54 Dent/RW99/B. Levitt
- '54 Educ/RW99/J. Tegart
- '54 Pet Eng/RW99/L. Field
- '59 Ag/RW99/L. McKnight
- '59 Bus/RW99/A. Cromb
- '59 Chem Eng/RW99/W. Maunder
- '59 Civil Eng/RW99/A. Hanert, G. Parker
- '59 Dent/RW99/J. Hardy, J. Nasedkin
- '59 Educ/RW99/B. Badger
- '59 Elec Eng/RW99/C. Twa
- '59 Nu(Dip)Sept/Penticton/M. Zellent
- '59 Phys Ed/RW99/D. Enger
- '64 Bus/RW99/L. Bourk, M. Bastide
- '64-'97 Masters Psych/RW99/P. Kinkaide
- '69 Dent/June, Jasper/K. Strong
- '69 Nu(Dip) Sept/RW99/C. Boyce
- '74 Dent Hyg(Dip)/RW99/N. Leicht
- '74 Educ/RW99/C. Galan, W. Madden
- '74 Geology/RW99/A. Hedinger
- '74 Home Ec/RW99/C. Darem-Sanders, C. Natrass
- '74 Rec Admin/RW99/T. Mack
- '79 Bus/RW99/R. Fritz
- '79 Civ Eng/RW99/A. Drew-Brook
- '79 Educ/RW99/S. Bard
- '79 Mech Eng/RW99/G. Lorimer, M. Ackerman, R. Norton
- '79 Speech/RW99/S. Wagner
- '89 Bus/RW99/S. McGuire
- '89 Chem Eng/RW99/F. Moscicki
- '89 Elem Educ/RW99/E. Hodgkinson
- '89 OT/RW99/B. Iwaniak
- '89 Phys Ed/Summer/S. Wallace
- '89 Rec Adm/July/M. Shenher, S. Schaefer
- '94 Educ(Dip)/RW99/M. Tryon
- '94 Educ/S. Phimester
- '94 Geography (Masters)/RW99/W. Proudfoot
- '94 Pharmacy/RW99/S. Hanson
- '94 Phys Ed/RW99/J. Koehli
- '94 PT/RW99/G. Wedman

FUTURE REUNIONS

- '50 Civil Eng/2000/G. Stefanick, C. Weir
- '50 Honours Science/2000/H. Buckmaster
- '60 Chem Eng/2000/E. Jack
- '60-'95 Mech Eng/2000/D. Dale
- '75 Dent/2000/F. Van Gyn
- '77 Mech Eng/2002/K. Litman
- '80 PT/2000/S. Petkou

Printmaking Exhibit
Royal College of Art
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and watch your mail for details

Vancouver

11 April 1999
Spring Brunch & AGM
Royal Vancouver Yacht Club
Call Gladys Utendale at 534-3709

Victoria

24 April 1999
Luncheon & AGM
Uplands Golf Club
Call Ted Sawchuk at 385-3555

Calgary

2 June 1999
4th Annual Spruce Meadows

Alumni Event
Call Keith Sveinson at (403) 289-2471

Constituent Groups

Business Alumni Association

11 February 1999
Members' Reception
Location: TBA
Call Susan Robertson at 492-2348

Rehabilitation Medicine Alumni Association

11 February 1999
Annual General Meeting
5:00 – 6:30 pm
Alumni Lounge, Corbett Hall
Refreshments. All Alumni Welcome!

Dental Alumni Association

19 February 1999
Members' Reception
BCDA Conference, Waterfront Hotel, Vancouver
Terrace Suite, 4:30 – 6:00 pm
Call Coleen Graham in Alumni Affairs at 492-4523

Other

Edmonton

Studio Theatre presents William Shakespeare's *As You Like It*
10 February 1999
All Alumni Welcome!
Location: Timms Centre for the Arts
Call Gina Wheatcroft at 492-0866

SALUTE TO VOLUNTEERS



James (Jim) Plecash, '57 DDS, '74 MSc(Oral Path), with the support of his executive committee, has provided the leadership necessary to revital-

ize the Dental Alumni Association. With its reformation, the Dental Alumni Association eliminated dues for members and made all alumni and dental students automatic members. In addition, it also hosted two events for students and alumni and a convocation breakfast for graduating students, held receptions at the annual meetings of the Alberta Dental Association and the B.C. Dental Alumni Association, and published a newsletter. The group has also been very active in raising funds for student scholarships and bursaries.

Jim was a faculty member in Dentistry from '1971 to 1992, except for a two-year hiatus when he completed a certificate in periodontology at the Oregon Health Sciences Centre. During his tenure as professor at the U of A, Jim was chair of the Division of Oral Diagnosis, assistant dean of clinical affairs and director of patient management. He also served on the executive of the former Dental Alumni Association for more than 10 years and on the University of Alberta Alumni Association council for three years.

Retired, he and his wife Barbara enjoy spending time with their grandchildren. In addition to his volunteer commitments, Jim actively pursues his hobbies—golfing, fishing, and skiing.

THANK YOU

The Alumni Association is grateful for the support provided to Reunion Weekend 1998 by the following sponsors:

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ALUMNI SCRAPBOOK



▲ Participants in the Alumni Branch Presidents' Seminar held in conjunction with Reunion Weekend 1998 included (from the left) Bert Dyck, '67 BA, Banff and Canmore; Ted Sawchuck, '47 BEd, '60 MEd, Victoria; Marilyn Parker, '61 BSc(HEC), '66 BEd, New York; Harry Cogill, '65 BA, '72 MBA, Toronto; Trenton Perrott, '81 BA, Grande Prairie; William Yung, '91 BCom, Hong Kong; Keith Sveinson, '57 BSc(Ag), Calgary; Gladys Utendale, '75 Dip(Ed), Vancouver; and Jim Rae, '63 BSc(Ag), Winnipeg.



▲ Alumni president **Ralph Young**, '73 MBA, and his wife, Gay, welcome guests at the Reunion Weekend Tuck Shop Breakfast.



▲ President Fraser visits with members of the 50-year class at the Reunion Weekend Gala Dinner. Standing is **Eldon Foote**, '45 BSc, '48 LLB, '96 LLD (Honorary) who came all the way from Norfolk Island in the South Pacific.



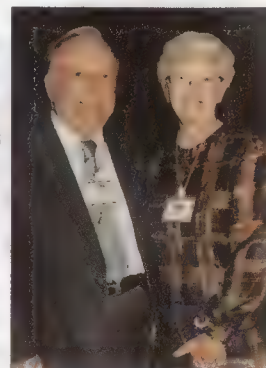
▲ Seen and noted somewhere on the Emerald Isle—a vestige of last summer's Alumni College Abroad in Ireland.



▲ One of the most enthusiastic reunion classes at Reunion Weekend '98 was the 1948 Civil Engineering class, which was celebrating its golden anniversary. The success was due in large part to the organizing efforts of **Virginia MacKay (Webb)**, '48 BSc(Eng). Virginia (right) was the U of A's first civil engineering graduate. Shown above are professor emeritus of engineering **Jack Longworth**, '45 BSc(Eng) and **Gordon Coates**, '48 BSc(Eng) with Gordon's wife, Hazel, at a reunion event.



► Among this year's many Reunion Weekend participants was **Alex Markle**, '48 BA, '62 BEd, '65 MA. Alex, who was director of Alumni Affairs at the U of A for three decades, is shown here with his guest, Earle Douglas of Victoria.



◀ Alumni and their friends and family, young and old alike, were encouraged to wear green and gold to show their pride in the University and its contributions to the community during University Pride Days, 1 to 4 October.



▲ Chancellor, **Lois Hole**, shown here with SU president **Sheamus Murphy** (centre) was guest speaker at her first alumni branch event in St. Albert on 25 September. She welcomed 165 students, U of A alumni, staff, and friends to a kick-off reception for St. Albert's Continuous Learning Celebration Society's weekend of special events.

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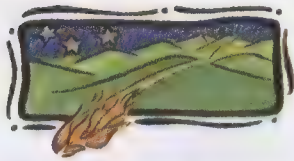
Web: www.ualberta.ca/alumni

Alumni Council Vacancies

Alumni are currently being sought to serve three-year terms on Alumni Council beginning in the spring of 1999. If you would like to nominate someone, or would yourself be interested in serving, please contact the Alumni Affairs Office for more information.

Representatives are being sought from the following areas:

- Dentistry
- Education
- Graduate Studies and Research
- Nursing
- Pharmacy and Pharmaceutical Sciences
- Physical Education and Recreation
- Faculté Saint-Jean
- Science
- Members at large



TRAILBLAZERS

Bringing them back alive

Bryan and Dona Erb, space pioneers

By Catherine Carson

Tales of space exploration, then more in the realm of speculative fiction than reality, captured the imagination of Bryan Erb in Grade 5.

Little did the Calgary native dream that he would himself become a space pioneer – albeit a behind-the-scenes expert rather than one of the astronauts whose names would become household words. But Erb doesn't covet the lime-light. He's content in the recognition that it was engineers like himself who devised the systems that launched the astronauts into space and brought them back safely.

"I'm a hard-core engineer," he says, "I never wanted to be a pilot. (The first astronauts were military test pilots.) But he hopes to fly in space – "as a tourist," he hastens to add. He believes that day is coming. "If I'm still alive and my health is good, I'd love to go."

Bryan Erb, '52 BSc, '55 MSc, '90 DSc (Honorary), joined the U.S. National Aeronautics and Space Administration in 1959. The Soviet Union had launched the first artificial satellites into space, and the United States, fearful of losing the space race, accelerated its efforts. NASA came north recruiting the well-trained Canadian engineers who had suddenly lost their jobs when the Diefenbaker government shut down work on the ill-fated Avro Arrow. Erb, who had an expertise in aerothermodynamics, was one of 39 engineers who accepted NASA's offer.

His wife Dona, '55 BEd, who has done work for NASA through her former employers, Lockheed Electronics Corporation and The MITRE Corporation, came into space technology through a more circuitous route.

"Women in the '50s had a limited outlook," she says in a joint telephone interview from their home in Friendswood, Texas, a suburb of Hou-

ston. "They could either go into teaching or nursing. I wanted to be a lawyer. My brother Neil was a lawyer. I worked in his office for nine summers and I loved it."

When even he asked: "Who would hire you?" she opted for teaching which she describes as a "portable career."

Dona, who had concentrated on mathematics and physics at the U of A, was drawn into computer science after Bryan concluded a year at MIT on a Sloan Fellowship – he received a master's degree in management there in 1968. She went on to earn a master of education degree in administration from the University of Houston in Texas and then a master's in computer



science as well. During this period, Dona taught at the University of Houston and then went to work for Lockheed Electronics Corporation. After five years she left Lockheed, where she had been supervisor of the Data Distribution Centre of the Orbiter Data Reduction Complex, and joined The MITRE Corporation, a not-for-profit think tank, where she worked on technology improvements of various NASA operations.

The Erbs could be considered childhood sweethearts. "We grew up in the same neighborhood in Calgary," says Bryan. "We went to the same school.

We went to the same church."

After graduating from the U of A, Bryan studied at the Cranfield Institute of Technology in the U.K. on an Athlone Fellowship, graduating in 1954 with a master's degree in aerodynamics and electronics. While Bryan was overseas, Dona participated in an exchange program in Connecticut, arranged by Mamie Simpson, then dean of women at the U of A.

The Erbs were married in 1955.

At NASA, Bryan was involved in spacecraft engineering and analysis on the Mercury and Gemini projects, the earliest manned spaceflight activities in the western world. He was tapped in 1960 to join the team that laid the foundation for what became Apollo and later managed the development of the heat shield that kept the Apollo

Command Module from burning up when it re-entered Earth's atmosphere. He also takes pride in his role in the development of remote sensing experiments, which led to global monitoring of wheat crops using Landsat satellite technology. Bryan retired from NASA in 1985 and the following year joined the Canadian Space Agency as assistant director of the Canadian Space Station Program to handle Canada's interests at Houston.

Dona, who credits the high quality education that she received in Alberta for opening doors for her, notes as a career high the demonstration of technologically advanced training programs for astronauts onboard the Space Station.

The Erbs are proud of each other's achievements. Throughout the interview they interrupt each other with

Although the Erbs have worked in the United States throughout most of their professional lives, they remain proudly aware of their Canadian roots.



BOOKMARKS

encouragement. "Tell her about —," they say.

Although the Erbs have worked in the United States throughout most of their professional lives, they remain proudly aware of their Canadian roots and Bryan is still a Canadian citizen.

Bryan sees his work at NASA as an example of what Canadians and Canadian technology can accomplish. The couple regularly entertains Canadians new to the NASA community, mentoring and offering support to the Canadian astronauts stationed there as well as to technical staff.

Dona took early retirement in 1993 when The MITRE Corporation downsized. It gives her time to work in her garden, to do volunteer work, and to be more active in their local United Methodist Church.

"It was either take early retirement or accept a transfer to another city," she says. "I was not happy. I grumped all the way."

But she didn't give up her career completely. She set up Erb Software Incorporated and continues to do consulting work for local technical organizations and volunteer consulting on Bryan's latest project. As of this past summer Bryan has taken on a new challenge as manager of the Canadian Space Power Initiative, an exploratory effort of the Space Agency that will eventually be part of an international project to capture solar energy in space and import it for use on the Earth. He's excited by this prospect. Once again his imagination is captured by the potential of something visionary — "Imagine! some day we'll be able to acquire carbon-free energy from space."

How long?

"If we were having this conversation five years from now —," he lets the sentence trail off.

"More like decades," interjects Dona. 🐾

Law-de-da! Lampooning the laws in our lives

George F. Takach, '85 LLB, '81 BA

This quirky little handbook takes a colorful look at the rules and laws of our daily lives and why we have all these rules anyway. (Peppercorn Press)



Legends of Our Times: Native Cowboy Life

Morgan Baillargeon, '84 BED and Leslie Tepper



Baillargeon and Tepper steer readers through the fascinating journey of the Native cowboy. Using stories, poetry and art, this richly illustrated book

shatters the stereotype of 'cowboys and Indians.' (UBC Press and University of Washington Press)

Restlessness

Aritha Van Herk, '78 MA, '76 BA

In Van Herk's latest novel, a desperate woman wishes to end her life, but cannot do so by her own hand. Instead, she hires an assassin who extracts stories from her to determine her willingness to die. (Red Deer College Press)



The Man From the Creeks

Robert Kroetsch, '48 BA '97 DLitt

It is a tale of hardship. It is the chasing of dreams during the Klondike Gold Rush. Follow 14-year-old Peek, his mother Lou, and Ben on their trek through Chilkoot Pass, the Golden Stairs and the Summit in the quest to strike gold. (Random House of Canada)

Leaning, Leaning Over Water

Frances Itani, '74 BA



The Ottawa River twists through this series of connected short stories told by Trude, middle child in the King family. Her stories reveal crucial moments in her family life and the social climate of pre-Quiet-Revolution Quebec. (Harper Collins Publishers)

A Celibate Season

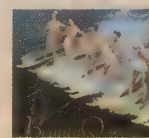
Carol Shields and Blanche Howard (Machon), '44BSc

Alumna Howard joins Shields in writing a novel about a 40-ish professional couple whose careers separate them for a season. This is its second release and it is currently being translated into Chinese. (Vintage Canada: A Division of Random House of Canada)

Beauty Queens: A Playful History

Candace Savage, '71 BA

Savage's wit is matched with humorous, yet telling illustrations of contestants throughout the years as she explores the history of the beauty pageant from 1850 to the present. (Greystone Books)



Beyond the Inuit Lands: The Story of Canadian Forces Station Alert

David Gray, '73 PhD

This is the story of a unique place; a place which defends Canada's sovereignty in the arctic territory. Gray has made numerous trips to the arctic, including trips to study the ecology of the Alert wolf pack and to research the history of CFS Alert. (Borealis Press)



The Doomed Bridegroom

Myrna Kostash, '65 BA



"They say a woman's first lover is the only lover; all who come after are surrogates." In her fifth book, Kostash reveals a personal history of provocation by transgressive men, real and imagined, in Canada, Eastern Europe and the Mediterranean. (NeWest Press)

Also Noted

Beneath the Horses's Eye: Poems by Dale Jacobs

Dale Jacobs, '93 MA, '88 BA (Spotted Cow Press)

Flat Side: Poems

Monty Reid, '78 MA, '74 BA (Red Deer College Press)

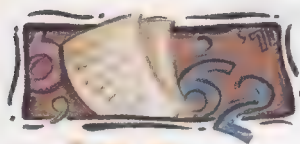
Out of the Shadows: Women and Politics in the French Revolution

Shirley Elson Roessler, (Peter Lang Publishing)

IN MEMORIAM

The Alumni Association has noted with sorrow the passing of the following graduates:

Albert Pallister Power '28 BCom, of Victoria in September '98
Gordon Edgar Robinson '28 Dip(Pharm) of Edmonton in November '98
Thomas Reed Haythorne '29 BA, of New Westminster, BC, in August '98
Eleanore Mary Tweddle (Griffith) '30 BSc(HEC), of Edmonton in May '98
Jean Ida Ruth Dobson (Haines Knowlan) '30 BA, of Ottawa in September '98
William Lyall Valens '30 MD of Victoria in October '98
Helen Ethel Geissinger (Hollands) '32 BA, of West Vancouver in August '98
George Henry Rose '34 LLB, of Edmonton in August '98
Robert Murray Bell '34 BA of Toronto in August '98
Edwin Woodford '34 BSc, '36 MSc of Langport, Somerset, U.K. in September '98
Howard Matheson '35 BCom of Calgary in August '98
Ralph Carlyle '35 BSc, '37 MSc of Langdon, Alberta in August '98
William John Collett '35 BA, '44 BDiv, '49 BEd, of Calgary in September '98
Mary Olive Redmond (Barnett) '35 (Dip)Nu of Vermillion, Alberta in September '98
Alfred Bayer '37 BSc(Ag), of Kelowna, B.C. in September '98
Vera M. Campbell (Gainer) '37 BSc of Edmonton in October '98
John Clarke Goddard '38 MD, of Hensall, Ontario in June '98
Gordon Richard Blott '38 BA, '41 MD, of Nanaimo, B.C. in August '98
Donalda (Donnie) Gillett '39 BSc(Nu), of Edmonton in October '98
Clifford Jacobs '39 BSc of Wayne, New Jersey in October '98
Herbert Angus Ripley '40 BSc of San Antonio, Texas in September '98
Primrose Field (Hyndman) '40 BA of Edmonton in November '98
Dilys Hornby '41 BSc(HEC), of Vancouver in August '98
William Robert Sinclair '41 BCom, '48 LLB, '84 LLD (Hon), of Edmonton in September '98
R. Denham Ross '41 BSc of Edmonton in October '98
John Alfred Toogood '41 BSc of Edmonton in November '98
Frank Emslie Deakin '42 BSc of Calgary in July '98
Gordon E. Myers '42 Dip(Pharm), '46 BS(Pharm), '48 MSc, '90 DSc (Honorary), of Edmonton in October '98
Bessie Eleanor Stanton (Morrison) '43 BSc(HEC), of Scarborough, Ontario in March '98
Erma Alberta Beauchamp (McCoy) '43 BA, '44 BEd, of Fort Saskatchewan, Alberta in October '98 ▶



CLASS NOTES

'28 N. Dermott McInnes, BA, '31 BDiv, of North Vancouver, reports that he recently moved from his home of 24 years to a condo with an encompassing view of the harbor, the mountains and Vancouver Island. Dermott and his wife, Janet Mae, are still active in church and other organizations, and he keeps busy with writing and photography.

'35 George Hawkes, BSc(Eng), worked four years at Dome Gold Mine and then 33 years at Kerr Addison Gold Mine, where he was Mill Superintendent from 1954-1972. Before retiring, George discovered a new genus *Novacystis hawkesi* in the Lake Timiskaming region in 1970. It was the first documented Silurian cystoid north of the Great Lakes. For more information on this unique holotype, check the *Geological Survey of Canada*, Bulletin 412, pg. 35-43.

'36 John George Sparrow, BSc(Eng), is 85 years old and enjoying his 25th year of retirement in Stayner, Ontario. In his working days, he mined gold in the Timmins area with Hollinger and Noranda.

'39 Rosamond Wilson (Dobson), Dip(Ed), '36 BA, and her husband Gordon enjoy the sunshine and friendly people of Sidney, B.C., where she is an active member of her local United Church Women's group. She reports that her five children live in various parts of the world, from British Columbia to Germany.

'40 Effie Dunn, MD, '35 BA, became a widow two years ago "after 52 years of a good marriage to Dr. E. A. Gain." The couple had retired to Sidney, B.C. in 1979. Much earlier, Effie had been in charge of the U of A's Department of Anesthesia for two years during the Second World War.

'43 Robert Betts, MSc, '42 BSc, of London, Ontario, remembers joining a crowd of freshmen at Convocation Hall to register in honors chemistry some 60 years ago. Time has not eroded this scene, he says. "It's still vivid in my memory."

'48 Barbara Bromley (Strong), BSc(Nu), '47 Dip(Nu), has been living in Yellowknife for the past 50 years. Since her retirement from public health nursing, she has run a bed and breakfast establishment.

'49 Lila Engberg, BSc(HEC), was one of nine Women of Distinction, recently honored in Guelph. She was

recognized in the education, training and development category.

Freda Geuder, Dip(Ed), is busy documenting her travels for publication. She is also collecting material for a story on her family's pioneer days and the Depression.

'50 Arne Nielsen, MSc, '49 BSc, was recently inducted into the Canadian Petroleum Hall of Fame. Listed among his accomplishments are discovering the Pembina oil field and becoming the first Canadian to head a multinational company.

'51 John Basaraba, BSc(Eng), was an active student at the U of A. He was a member of the senior class executive (1950-51), of the junior class executive (1949-50), of St. Joseph's College executive (1950-51), and of the interfaculty soccer championship team (1950). John, who later played semi-pro baseball in Ontario, remains active, particularly as a golfer. He has played over 300 golf courses and has accumulated four hole-in-ones. After 40 years with CIL, John is retiring from his position as corporate purchasing manager.

Ingram Gillmore, BSc(Eng), retired from Westinghouse Canada Inc. in 1988 and now resides in Winnipeg. Bing recalls his days as engineering rep and includes in his note a message that was part of his campaign for that position. "Do the right thing ...Vote Bing."



Lorne Tyrrell, '68 MD, was recently presented with the Medical Alumni Association's 1998 Outstanding Achievement Award. Appointed dean of the Faculty of Medicine and Oral Health Sciences in 1994, Dr. Tyrrell has conducted research that has led to the world's first drug for treatment of chronic hepatitis B, a global health scourge. He won both the University's J. Gordin Kaplan Award for Excellence in Research and the 1998 Prix Galien Canada for Research.

Douglas Lord, BEd, has been retired from the Edmonton School system for 14 years. At 79, he is still flying high with his radio controlled planes.

'52 Gilbert Paul, MSc, '51 BSc(Ag), is retired and living in the country in Manitoba. Gilbert, who taught genetics at McGill U and statistics at the U of Manitoba, plans to soon begin his autobiography.

Rene Marrinier, BEd, splits his retirement days between his home in Edmonton, a condo in the Okanagan, and a spot in Phoenix, Arizona.

'61 Myrtle Fraser (Jones), BEd, '58 BSc(Nu), of Vernon, B.C., recalls being the first recipient of a scholarship introduced by the Associated Hospital Auxiliaries of Alberta. She is currently working on a book about her experience living in the Arctic.

'63 Beverley Reid, BA, is an award-winning filmmaker whose production work has taken her all over the world. Her latest television series, *Voyageurs of the Heart*, will find her shooting in India, Sri Lanka, Cambodia, Vietnam, Bolivia, Honduras and Guatemala.

'64 Phillip Silver, BA, who has been appointed dean of the Faculty of Fine Arts at York U, continues his career as stage designer. He currently designs for the National Arts Centre in Ottawa and the Citadel Theatre in Edmonton.

'65 Stirling McDowell, PhD, was awarded the Saskatchewan Order of Merit for his work in education and public service. It is the province's highest honor. Stirling is the former general secretary of the Saskatchewan Teachers' Federation and former secretary general of the Canadian Teachers' Federation in Ottawa.

Richard Sandilands, DDS, of Edmonton, recently became president of the Canadian Dental Association for the 1998-1999 term.

'67 Ronald Woodward, BEd, was recently appointed president of Red Deer College. He is the former president and CEO of the Saskatchewan Research Council, and former B.C. assistant deputy minister for science and technology programs, and also for apprenticeship and job training initiatives.

'68 Leona Fix, BEd, is retired and living in Stettler, Alberta. She is currently pursuing her interest in art.

'69 Harold Brulhart, BEd, having retired from teaching automobiles, now motors along in his second career as concert master of the Red Deer Symphony. "A string trio also adds much pleasure to my life," he reports from Ponoka, Alberta.

'70 Georges Carola, PhD, '65 MSc, reports from France that he is now the new head of CEA Grenoble.

Larry Chanasyk, BSc(Eng), was recently honored by the Canadian Standards Association with an Award of Merit. The founder and chair of the technical committee on agricultural machinery, he has been instrumental in raising the standard of equipment safety and comfort.

'71 Bruce Filan, BEd, '71 Dip(Ed), '69 BSc, of Victoria, is a lawyer employed by the B.C. attorney general's department.

Jacqueline Hayter, BA, reports that she is big into home composting and along the way has discovered an inadvertant activity — breeding fruit flies in the summer of 1998.

'72 Harvey Haakonson, MD, '68 BA, is semi-retired and working three days a week in Victoria, B.C. Come winter, Harvey migrates South. You will find him living in Palm Springs, California from November through April. **Gordon Lea**, Dip (Ed), '71 BSc (Ag), is principal of Jarvie School and also two Hutterite colony schools in the Westlock, Alberta area. Gordon still finds time to preside over the U of A Mixed Chorus Alumni Association. His wife, Pauline, is a home care nurse in Westlock.

Sara Meltzer, MD, acted as co-chair for the 1998 Guidelines in the Management of Diabetes in Canada conference. She is the out-going chair of the clinical and scientific section of the Canadian Diabetes Association.

'73 Harry Campbell, LLB, is associate director of the Centre of Behavioural Research and Program Evaluation at U of Waterloo. The centre was established by the Canadian Cancer Society.

David Gray, PhD, of Metcalfe, Ontario, was guest curator of an exhibit on the story of Canadian glass at the Canadian Museum of Civilization. He is a scientist and writer for Grayhound Information Services — a company he and his wife Sally started in 1993.

Walentin Mirosh, LLB, '68 BSc (Eng) has a new title these days. He was

recently named senior vice-president, corporate strategy and business development with TransCanada PipeLines.

'74 Virginia Cathcart, Dip(DentHyg), '70 BA, is a full-time instructor and course coordinator in dental hygiene at Vancouver Community College. She is the 1998 president of the B.C. Dental Hygienists' Association. Ginny and her husband, Jim, "have just moved into their dream home near beautiful Grouse Mountain."

Nigel Flook, MD, '72 BSc(Med) was named the 1998 Canadian Family Physician of the Year. He currently practises in Edmonton.

'76 Robert Mackay, LLB, is president of the British Columbia and Yukon Division of the Duke of Edinburgh's Award, Young Canadians Challenge. He resides in Vancouver.

Brian Medford, MSc, is currently the coordinator of laboratories and facilities and undergraduate programs in biological sciences at Simon Fraser U.

'77 Jean Jobin, PhD, '75 MSc, is a professor with the department of medicine in the Faculty of Medicine at Laval U. Jean is also president of the committee organizing the Quebec International Symposium on Cardio-pulmonary Rehabilitation in May 1999.

Helen Luchkanych, Dip(Ed), '72 BEd, and her husband, Mike, spend much of their golden years travelling the world. They now reside in Glendon, Alberta.

Karl Martens, BCom, is currently pursuing a degree in computer science at U College of the Cariboo. He reports that he and his two teenage sons love the lifestyle in the B.C. interior. Old friends and frat brothers can contact him at k_martens@cariboo.bc.ca

Robert Sproule, MA, presented two academic papers at the Universities of Stockholm and Orebro, and at the Jonkoping International Business School this past spring. He is professor of economics, Williams School of Business and Economics, Bishop's U.

'78 Diana Anderson, BA, exhibits coordinator at the Red Deer and District Museum, recently received the Red Deer College Distinguished Alumni Award for her work in the arts. She is the second recipient of this award. The first person to receive this distinction was also a U of A grad, **Micheal Dawe**, '67 BA.

Thomas Carter, LLB, '75 MA, has joined Canada Trust as an estate

At age 97, **Bertha Lawrence**, '21 BA, '37 MA, may well be the University's oldest living graduate. Bertha, who survived German U-boat



attacks in the First World War and the bombing of London in the Second, was born in England, where she returned to study as an IODE scholar after her graduation in 1921. She then taught in Edmonton, bringing an international perspective to the classroom and writing a social studies text for grades 11 and 12. Actively involved in the United Nations Society in Edmonton, in 1965 she won a three-month scholarship to study the UN's inner workings. Early in September, President Rod Fraser took Bertha to lunch to share with her some of the exciting recent developments at the University and to take advantage of her long-term perspective.

consultant after almost 20 years of private law practice. He has published several articles in various legal magazines including *Canadian Lawyer*. Look for his book, *Your Personal Directive — More than a Living Will*.

'79 Kirk Lambrecht, BA, '75 BA, has assumed the office of president of the Canadian Bar Association, Alberta Branch for a one-year term. His book, *The Administration of Dominion Lands 1870-1930*, was published by the U of Saskatchewan in 1991.

Phillip Milnthorp, MEd, '64 BEd,

retired in 1995 after 34 years as teacher and principal in Wetaskiwin, Alberta. Phillip has been a school trustee for the past three years and is hoping for re-election... "Thereby serving education in Wetaskiwin for 40 years!"

Donald Symes, BEd, is seeking former Bonnie Doon High School teachers and students who would like to attend the Class of 1974's 25th reunion. It will take place 21 and 22 May 1999. For more information e-mail at Donald at dksymes@telusplanet.net or phone (403) 481-2585.



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IN MEMORIAM

Marjorie Jean Grant '43 BEd, '43 BSc(HEC), of Edmonton in August '98

Arthur Kitchener Brimacombe '44 BSc, '49 BEd, '57 MEd of Victoria in August '98

Donald Cooper Johnston '44 MD, of Edmonton in September '98

Ronald Clarence Richardson '45 BSc(Eng), of Calgary in May '98

Michael George Toma '45 BA, '45 BEd of Edmonton in September '98

James Walter Briggs '46 BA, '66 MEd, of Edmonton in September '98

Donald Leslie Rees '46 BSc, '48 MD of Edmonton in October '98

Hartley Campbell Jackson '46 BSc of Calgary in November '98

Norman Herbert Cuthbertson '47 BEd, '51 MEd, of Victoria in August '98

James Larcombe Paterson '47 BSc, '48 MD of Victoria in November '98

Percy Raymond Clarke '48 BSc(Eng), of Oakville, Ontario in August '98

James Richardson Fish '48 BCom of Calgary in October '98

William Ernest Julian '48 BSc of Strathmore, Alberta in November '98

Marjorie Ma Claire Hulbert '49 BSc(Nu) of Calgary in August '98

Dolores Isabel Fabiani '49 BSc(HEC), of Isola D'Elba Livorno, Italy in October '98

John Luke Robinson '49 BA, '50 LLB of Red Deer, Alberta in October '98

Grant Wheeler '49 BEd, of MaGrath, Alberta in July '98

Allan Duncan Matheson '49 BSc(Ag), of Calgary in November '97

Jerome Reyda '49 BA, '50 LLB, of Edmonton in October '98

Earl Edward McFall '50 BSc(Ag), of Edmonton in November '98

Joseph Bertram Bowron '50 BSc(Eng), of Calgary in April '98

Marian Josephine Arthur (Parker) '50 Dip(Ed) of Calgary in August '98

Edmund Marr Foo '51 BSc of Calgary in February '98

John Lawrence Pollock '53 BEd, of Red Deer, Alberta in August '98

Cyril Groves '54 Dip(Ed), '55 BEd, of Calgary in June '98

James Munro Carmichael '54 BSc, of Edmonton in September '98

Myron Ray Butterfield '55 BEd, of Surrey, B.C. in August '98

Archibald John Bain '55 BEd, of Edmonton in August '98

Myron Ray Butterfield '55 BEd of Surrey, B.C. in August '98

Allan James Forbes '55 BSc(Civ E), of Edmonton in October '98

Bessie Jane Louie (Mah) '56 BEd, of Calgary in July '98

Frank George Lain '56 BSc(Eng), of Westbank, B.C. in September '98 ▶

'80 Avonlie Wylson (Beverly

Quinn), BCom, '77 Dip(DentHyg), is an executive search consultant in San Diego, California. She specializes in placing finance and accounting professionals in the area. Her husband, Paul Jacob, is a consulting civil engineer.

Stephania Zariski, BEd, is enjoying retirement after a career of teaching French in the Bonnyville-St. Paul area of Alberta. Stephanica has gone from building young minds to building a new house in Calgary, where she will be closer to her only daughter, Larissa.

'81 Robert Middleditch, BMus, received his degree while on the faculty of arts staff. He retired two years later.

Keith Spencer, MA, '65 BA, of Edmonton, has returned from competing at the World Masters Games in Portland Oregon. He won a gold medal in the badminton singles competition.

Ian Totman, BSc(Eng), is working for a small, growing software company in Toronto. Ian still finds his mechanical engineering background useful. "It provides hours of entertainment for recreational calculus."

'82 Glen Fitzpatrick, BSc(Eng), received the first annual Technical Excellence Award from the Alberta Society for Engineering Technologists. Glen, product manager, spearheaded the development of industrial and biomedical products for Alberta Microelectronic Corporation, which is considered a world leader in thin films, micro-machining, and glass etching.

John Holmes, LLB, '79 BA, was appointed provincial and national council member of the Canadian Bar Association. His Red Deer law firm, Holmes & Company, specializes in personal injury and insurance litigation.

Reginald Radke, BSc(Ag), is director of community education and training at Alberta Vocational College, Edmonton. Recent work in international consulting gave Reg an opportunity to visit Russia and Egypt.

'83 Grant Beattie, BSc(Eng), and his wife, Wendy, have moved to Southern California where he works for Pacific Micro Data. Friends may reach Grant and Wendy through e-mail: grantb@freenet.edmonton.ab.ca

Tammy Grant (Hutzcal), BSc(Pharm), and her husband, Gerry, welcomed their first child, a daughter, in December 1997. Tammy is enjoying parenthood tremendously and continues to work as a staff pharmacist for Safeway on a part-time basis.

Neil Maskell, BCom, returned from Thailand in 1992 and is now married with two children. He has been working for Sunspun since 1993 in food-service sales.

Brian Tywoniuk, BA, is a manager with the Alberta Treasury Branch asset management team in Edmonton.

'84 Andrea Blonsky, LLB, '81 BA, lives with her husband, Laun Bell, and their two children in Cochrane, Alberta. Andrea, who works part-time in the law offices of Ferchod Associates, enjoys the mountains and acreage living.

Jeffrey Lowe, BSc(Eng), and his wife were recently transferred to Anchorage, Alaska, where he is the lead instrumentation and controls engineer for NANA/Colt Engineering, LLC. "Alaska is something else!"

Wayne Lui, BSc(Eng), and **Megan Watson**, '87 BCom, are now married and permanent residents of Surrey, England. Wayne is a project manager for Transcanada International and Megan is a commercial economist for BG PIC.

Vaughn H. Myers, LLM, '81, LLB, '78

BA, was recently appointed chairman of the review tribunal for the Canadian Pension Plan. The appointment was made by a Federal Order in Council.

Jodee Rogers, BSc, has been appointed financial advisor at Royal Trust Corporation. She is a personal financial planner, a designation recognized by the Institute of Canadian Bankers.

'85 Dianne Bunn, BPE, is achieving recognition as a provider of experiential education for the corporate community.

Mia Maki (Hagan), BA, is completing her MBA at U Victoria and works full-time as a senior manager for a music technology company.

Grace Yarmak, BSc(Nu), works full-time in critical care nursing at the Misericordia Hospital in Edmonton. This year marks 25 years in critical care service for Grace.

'86 Sandra Ogradnick, Dip(Ed), '76 Dip(Ed), received the Prime Minister's Award for Teaching Excellence and a finalist's award from Alberta Education for Excellence in Teaching. She teaches math and physics at Leduc Composite High School. Sandy and her husband, Greg, have three children.

Susan Turner, BA, a certified childcare counsellor in Edmonton and full-time mother of two preschool daughters, recently took a nostalgic stroll through HUB. "I couldn't believe HoHo's is still there. Their rice sustained me for a couple of years."

'87 Maxine Klak, BCom, joined Maclab Enterprises last year as corporate controller. Previously, she worked with Deloitte and Touche Chartered Accountants for 10 years.

Neil Mabillard, BSc(Pharm), is still working as a pharmacy manager with Zellers Inc. He left Grande Prairie in March 1998 and is now enjoying West Coast living in 'sunny' White Rock, B.C.

Niall Shanks, PhD, received the East Tennessee State University Distinguished Faculty Award in Research. Niall co-authored *Brute Science: The Dilemmas of Animal Experimentation*, and is a member of several academic and professional organizations, including the Tennessee Philosophical Association.

Ruth Thorkelson, BA, was recently appointed executive assistant to the Minister of Finance in Ottawa.

'88 Jody Acton, BSc(Eng), and **Cynthia Acton**, '89 BSc(Nu), were

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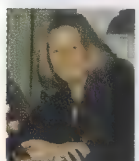
1998 ALUMNI WALL OF RECOGNITION

DISTINGUISHED ALUMNI AWARDS

On 1 October 1998, during University Days, four distinguished alumni were inducted to the Alumni Wall of Recognition. These graduates have demonstrated outstanding professional achievements, exceptional community involvement, and service to society or the welfare of others. The Wall, located in the Students' Union Building on campus, serves as an inspiration to current U of A students.

KATHERINE GOVIER

'70 BA (Honors)



Katherine Govier has made an exceptional contribution to the vitality of Canada's literary life. The acclaimed author of the novels *Hearts of Flame* and *Angel Walk*, she is the winner of the 1997 Marion Engel Award, which recognizes a Canadian woman author in mid-career for outstanding prose writing. Other honors include the City of Toronto Book Prize in 1992 and both the National Magazine Award and the Authors Award in 1979.

In her fiction, Ms. Govier transforms the incidents of daily life to give them magical significance. Her strong women characters and her insight into relationships have touched readers in many countries. In addition to the acclaim that has greeted her novels, her short fiction has been included in major anthologies. Beyond her contributions as a writer, Ms. Govier has enriched Canada's literary community through her work as the chair of the Writer's Development Trust and as the co-founder of the Writers in Electronic Residence program. She has also been president of PEN Canada, which works on behalf of writers in prison and promotes freedom of speech around the world.

GEORGE STANLEY

'29 BA, '71 LLD (Honorary)

For his wide-ranging contributions to understanding the Canadian identity, George Stanley has been invested as a Companion of the Order of Canada. A pioneer in the study of western Canadian history, he is the author of 15 books,



including a biography of Louis Riel and the seminal work *The Birth of Western Canada*. In recognition of his standing as an historian, he has been honored as a Fellow of the Royal Society of Canada and has received numerous honorary degrees.

Dr. Stanley was named a Rhodes Scholar and attended Oxford University after his graduation from the University of Alberta. He is also a distinguished veteran of the Second World War who completed his service as a lieutenant-colonel. He has always had a passionate regard for the welfare of Canada. A former lieutenant governor of New Brunswick, he established the country's first undergraduate Canadian studies program at Mount Allison University. However, his most visible contribution to Canada is the design of the distinctive maple leaf flag that first flew in 1965. It is based on a sketch he provided to a parliamentary flag committee in the early 1960s.

ANATOL ROSHKO

'45 BSc (Eng)



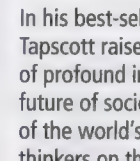
Anatol Roshko is internationally known for his research in various areas of fluid mechanics

and gas dynamics that are important in aerospace engineering. He is the co-author, with H.W. Liepmann, of the book *Elements of Gasdynamics*, which was published in 1956 and remains a standard text, widely used throughout the world. His academic career includes two years of teaching at the University of Alberta and 40 years at the California Institute of Technology, where he is now Theodore von Kármán Professor, Emeritus.

A member of the U.S. National Academy of Engineering and a Fellow of the American Institute of Aeronautics and Astronautics, Dr. Roshko has been a consultant to government laboratories and companies such as the McDonnell-Douglas, Rockwell, and General Motors Corporations. A world authority on turbulent shear flows, he is known for the breadth and originality of his work. He and his students have made significant contributions in fluid mechanics, including work on coherent structures that initiated new directions in turbulence research.

DON TAPSCOTT

'78 MED



In his best-selling books, Don Tapscott raises questions that are of profound importance to the future of society. Considered one of the world's top writers and thinkers on the impact of information technology, he has

been described as one of the most influential media authorities since Marshall McLuhan. American Vice-President Al Gore has called him one of the world's leading cyber-gurus. He is an advisor and consultant to many Fortune 100 companies and governments on every continent.

National and international interest in Mr. Tapscott's writing has grown with the publication of each of his books. The *Digital Economy* became an international best seller within one month of its release and was named the top-selling business book for 1996. *Paradigm Shift* (1993), *Growing Up Digital* (1997), and *Blueprint to the Digital Economy* (1998) are also international bestsellers. Mr. Tapscott is deeply committed to the issue of mental health research funding and works extensively with other business leaders to raise awareness on this issue.

1998

DISTINGUISHED ALUMNI AWARDS

Do you know a leader in your profession or community who is a graduate of the University of Alberta and has a history of:

- exceptional community involvement ■ serves as an inspiration to University students?
- outstanding professional achievements ■ service to society or the welfare of others

Nominate him or her for a **Distinguished Alumni Award** from the Alumni Association. Award winners will receive recognition from their alma mater and will be inducted on to the **Alumni Wall of Recognition** on 30 September 1999

DEADLINE FOR NOMINATIONS:
27 FEBRUARY 1999

For more information or a nomination package, please contact the Office of Alumni Affairs.

preparing for the arrival of a new baby in December. It will be their second child. Jody is a senior engineer with Hitachi (Canadian) Ltd., working on the nuclear steam plant pumps for the Qinshan, China CANDU project. The couple now reside in Burnaby, B.C.

Mary Gainor, BCom, has landed a three-year work term with Proctor and Gamble Pharmaceutical in Cincinnati, Ohio. She will work on training and development of the Canadian sales force as well as a training program for a new osteoporosis therapy.

Jonathan Huyer, BSc(Eng), looking for a means to keep physically fit, began running four years ago and has completed 10 marathons, including the Ironman Canada triathlon.

Lorraine Ross, MEd, '78 BEd, '76 BA, '75 BA, completed her PhD at the U of Iowa and is now the art education coordinator at Wayne State U in Detroit, Michigan.

Bernard Williams, MA, '86 BPE, his wife, **Judy Williams (Long)**, '87 BA, and their three children recently relocated from Edmonton to sunny

Lethbridge, Alberta. He has accepted a tenure-track appointment in the faculty of management at the U of Lethbridge.

'89 Susan Cullum, BEd, is teaching high school in Three Hills, Alberta. She and her husband live on a farm south of the community.

Glen Ellingson, MEd, retired in June of this year from teaching at Alberta Vocational College in Edmonton. His newly established berry orchard, south of Strathmore, keeps him jammin'.

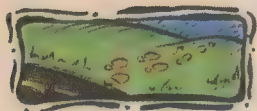
Kay Gould, BSc(Nu), is the 1998 recipient of the Heritage of Service Award from the Alberta Association of Registered Nurses. She was also the 1997 recipient of the Grant McPhail Award of Excellence from the Glenrose Rehabilitation Hospital, Edmonton. Kay and her husband, Ross, have moved to Calgary to be closer to family and their "beloved mountains."

Lynn Hamilton, LLB, '88 MBA, '84 BA, and her husband, Paul Lane, are busy with a new edition to their family, baby number three.

Anna Marie Hogan, BSc(Nu), of Drumheller, Alberta, enjoys the variety



During the month of September 1998, **Pat Bates**, '73 BEd, '83 MEd, who serves as the academic alumni coordinator for the Faculty of Physical Education and Recreation, drove across Canada and back to meet with the Faculty's alumni. During her trip she helped host social gatherings in 15 cities. She is shown here in Kingston, Ontario at an alumni luncheon at the Grizzly Grill. The meal was followed by a classic, exciting game of football played between the University of Alberta Golden Bears and Queen's University Golden Gaels. The Golden Bears triumphed, in a come-from-behind victory, by a score of 34-27. On her journey, Pat drove a 1998 Chevrolet Lumina provided courtesy of Hertz Truck and Car Rental, Edmonton. Arrangements were made by **Percy Gendall**, '84 BEd, who is vice-president and an alumnus of the Golden Bears football team. In the photo are (from the left) Pat Bates, **George Short**, '64 BPE, a member of the 1963 Golden Bears football team; **Leona Fracas** (wife of Coach Fracas); and **Gino Fracas**, '58 BEd, head coach of the 1963 Golden Bears football team.



OFF THE BEATEN PATH

Dale Hrabí, 87 BA, took a circuitous route to his current job. He's the creative director of a new men's magazine, *Maxim*, but the epiphany that put him on his career path is easy to pinpoint.

It occurred in Chaucer class at the U of A in the fall of 1981, when Hrabí was in his first year of honors English. Surrounded by classmates obsessed with "nitpicky detail," Hrabí concluded he was in the wrong field. In retrospect, he says, the nitpicky detail was "most likely scholarship." But the damage had been done.

"It became apparent to me," he says, "that I just didn't have tweed in my future." Published in New York, *Maxim* is anything but tweedy. As a recent New York Times article put it, *Maxim*, "encourages its readers to exist in a perpetual state of chest-thumping, girl-chasing, adolescent jokesterism."

Yet the magazine described by magazine consultants as "the Playboy of the 1990s" is slick, sleek, and clearly meant for a literate audience. With a readership largely consisting of 18-to-30-year-old men, it's filled with ads for expensive cars, electronics, and liquor. The articles tend to focus on sports, cars, and women (how to

pick them up and make them happy). And in the interest of the "girl-chasing" reader, the covers almost always feature a scantily clad starlet.

The approach appears to be working. Since the magazine's launch in the spring of 1997, *Maxim's* circulation has mushroomed. By January, Hrabí says, it will be up to 650,000, the same as the more established *GQ* and more than *Details*, magazines that Hrabí says target men who are, respectively, fashionable and hip. *Maxim's* key to success: it's aimed, Hrabí says, at "so called normal guys." In some ways, it reminds him of Alberta. "It's earthy, familiar, and down-home," he says on the phone from his Manhattan office.

"One thing I kind of have to do to work on this magazine is tap into my youth, the kind of guys I went to school with, went water-skiing on the lake with, and drank beer with."

Hrabí wasn't always so focused on his roots. After graduation, he moved from one major Canadian city to another, working mostly in journalism. His jobs included editing a bilingual newspaper for continuing education students at McGill University in Montreal, and being the manag-

ing editor at the Toronto-based fashion magazine, *Flare*.

"It was quite thrilling for a while," he says of his stint in the women's fashion magazine world. But after little more than a year he was invited to help start a new magazine in Vancouver, and he was off again. When that project died seven months later, Hrabí followed some former colleagues to New York.

For a year and a half, he freelanced for *Mademoiselle*, *Seventeen*, and *Marie Claire*. Eventually he was hired to edit a new pop culture magazine titled *Blender*, which was distributed on CD ROM. That venture was short-lived, but when it perished, Hrabí landed at *Maxim*, whose owner had financed *Blender*.

At *Maxim* Hrabí reviews and critiques layouts, writes, and edits. Among his recent efforts, an October-issue roundup in which he rated horror movie screamers. Although it was largely an excuse to feature photos of pouty young actresses, the article is entertaining, amusing, and illuminating. (On a scale of 1-to-10, Patricia Arquette of *Nightmare on Elm Street 3* rates a 10. Neve Campbell of the "Scream" movie series garners only a 2



Dale Hrabí

photo: Zoe Chan

"couldn't shatter a Pringle's Potato Chip" opines Hrabí.)

Hrabí says that *Maxim* shares a similar sense of irreverence with Conan O'Brien's late-night television talk show. And that same offbeat spirit spills over from the editorial pages to the office, making it a fun place to work. As a result Hrabí, who used to live by the "never stay in a job longer than a year" rule, is in no hurry to leave. "I really like the magazine," he says. "I have trouble imagining other magazines I'd want to work for, because the colleagues here are a very talented group. It's a magazine that's trying to be funny, and that's rare right now." - D. Waldman

FACULTY OF SCIENCE University of Alberta

Announcement

Faculty of Science Research Award

We are seeking nominations for the Faculties most promising young scientists for this annual award, which recognizes outstanding research achievement. Nominees must have obtained their doctorates in 1986 or later.

Deadline December 31 1998

For details of eligibility and conditions, please contact:

Dr. W.A.G. Graham
Associate Dean (Research)

e-mail:
william.graham@ualberta.ca

Phone: 492-3169

Faculty of Science Award for Excellent Teaching

We are seeking nominations from students and departments in the Faculty of Science for this annual award for individuals with outstanding qualities in undergraduate teaching.

Deadline January 21 1998

For details of eligibility and conditions, please contact:

Dr. J.S. Nelson
Associate Dean

e-mail:
joseph.nelson@ualberta.ca

Phone: 492-5072

and challenge of rural nursing. She works with obstetrics, general medicine, and surgery

Susan E. Jordan, BA(CdnSt), has moved to Grande Prairie from the northern Alberta community of Red Earth Creek. Susan worked as a program co-ordinator providing Early Intervention Services for children and is training to serve with the RCMP Victims' Services as a victim support worker.

Brian McLeod, BA, is the new director of Campus Security Services at the U of A. Brian, who served 26 years with the RCMP, currently resides in Sherwood Park, where he coaches various sports.

Michael Perchinsky, MD, '87 BSc(Med), completed general surgery residency in Portland, Oregon and CT surgery residency at UBC. He is now moving to Victoria to begin a practice in cardiac and thoracic surgery.

John Punko, Dip(Ed), '72 BEd, '63 BSc, has retired as assistant director from the Alberta Distance Learning Centre after 31 years of service. He and his wife, **Louise (Callas)**, '82 BEd, '77 BA, are currently facilitating marriage enrichment programs. Louise remains a teacher for the Alberta Distance Learning Centre.

Suzan Szewaga, BEd, is living in Lethbridge and teaching at Magrath Junior/Senior High School, as well as at Lethbridge Community College. She is past president of the ATA. "I'm looking forward to seeing fellow Education grads at the '89 Reunion."

'90 Stephen Astley, PhD, is a lecturer of chemistry at Ege U, Izmir, Turkey. He and his wife welcomed their second child this past year.

Soo-Hyang Choi, PhD, '85 MEd, was appointed chief of the Early Childhood and Family Education Section, Basic Education Division at the UNESCO Headquarters in Paris, France.

Alexandra Parr, BA, is a new account manager at Broughton Communications Group in Victoria, B.C.

Brian Taves, BCom, is territory manager for Parke-Davis, a division of Warner-Lambert. He and his wife, Angela, have been married for nine years and have two children.

'91 Brent Gamble, BCom, was admitted to partnership in Burdyssey Petluk and Partners, a chartered accountancy firm in Peace River, Alberta.

Anne Wilson, BSc, is currently working on a MSc at the U of Manitoba, on leave from her job as water pollution specialist with Environment Canada in Yellowknife.



Charlene Rooke, '91 BA is the new editor of the University of Calgary Alumni Magazine. Charlene, who went on to study

journalism at Ryerson after graduating from the U of A, spent the last four years as associate editor of *New Trail*. During that time she received a Rising Star award from the Canadian Council for the Advancement of Education.

'92 Gillian Clarke, LLB, is a lawyer with Witten Binder in Edmonton. She and her husband, Micheal welcomed their first child in November 1997. It's a boy!

Karen Lee, BEd, is "very happy to be living and working in Hong Kong." She teaches kindergarten at the French International School.

Janie Scheidl, BEd, and her husband, **Michael Scheidl**, '91 BA(RecAdmin) are pleased to announce the birth of a son last April. Janie is a counsellor at a school in St. Paul, Alberta and Micheal has moved to a position with Alberta Community Development.

Rita Wong, MA, recently published a book of poems entitled, *Monkey Puzzle*, under Press Gang Publishers.

'93 Jacqueline Christofferson (Steinkey), LLB, celebrated her marriage this past August, "at a party that would have made Martha Stewart jealous!" Jackie continues to practise at the law firm of Brito and Company. She and her new husband, Greg, live on the shores of Fort Langley, B.C.

Raymond Lok, BCom, has recently joined Nortel in Calgary as financial analyst in the Wireless Control Department. He has also earned his CMA designation and will be convoking this fall.

'94 Bob Hall, BA(NativeSt), former sports editor of the Gateway, is now the news reporter/photographer at the *Nelson Daily News* in B.C. He and his wife, Janice, welcomed their first child, in February 1998.

Cindy Larkings (Perrault), BSc(PT), reports from Forbes, Australia. She opened her own practice called Western Maple Physiotherapy. (A touch of home in the name.) Cindy married a farmer. "No children yet, just puppies!"

IN MEMORIAM

Gladys Lenora Copeland (Carlson) '56 BSc(HEC) of Gloucester, Ontario in October '98

Vern Arnold Low '57 DDS, of Rossland, B.C. in March '98

William Robert Cram '57 BSc(Ag), of Calgary in August '98

Raymond Oliver Skaret '57 BEd, of Edmonton in September '98

William Kutt '57 BEd, of Red Deer in October '98

Robert William Lane '59 BA, of Red Deer in September '98

Robert Findlay Burch '61 BEd, '66 Dip(Ed), of Calgary in August '98

Otto William Jensen '62 BEd, of Calgary in July '98

Leona Jeanette Brown '62 BSc(Med), of Eckville, Alberta in September '98

Dorothy Violet Jacobson '62 BEd of Calgary in September '98

Donald Frederick Priddle '64 BCom, of Campbellville, Ontario in August '98

Betty Anne Huculak (Rae) '64 BEd of Calgary in September '98

Ronald Thomas Clare '64 BSc(Eng), '66 MSc, of De Winton, Alberta in October '98

Henry Edway Young '65 BA, of Toronto in July '98

Annie Veronica Bachman '65 MEd, of Edmonton in September '98

Kuei-Shou Wu '65 MA of Red Deer in October '98

Barbara Joan Wright '67 BCom, of Calgary in April '97

Mydra Ellen Dragland '67 BEd, of Leduc, Alberta in August '98

Kathleen Anne Carmichael '67 BEd, of Edmonton in August '98

Augustus John Cooper '67 BEd of Edmonton in November '98

Terrence George Thompson '67 DDS of Richmond, B.C. in November '98

Trudy Colberg '68 BSc(HEC), of Red Deer in September '98

Herman Max Specht '69 BEd of Camrose, Alberta in November '98

Edith Marie Gruber (Utschig) '70 BA, '71 BEd, '75 MA, '90 PhD of Edmonton in November '98

Charles Beverley Koester '71 PhD, of Kingston, Ontario in February '98

Charles Beverley Koester '71 PhD, of Regina in February '98

Jose Enriquez Sabater '71 LL.M of Quezon City, Philippines in August '98

Helen Henrietta Jantzie '73 BEd, of Edmonton in August '98

David George Culverhouse '73 BSc, of Edmonton in September '98

Reg Sanby '73 BEd of Victoria in October '98

William Glenn Roddie '73 BFA of Calgary in November '98

Melanie Litoski, BCom, who received her CA designation in April 1997, practises in Hinton, Alberta with C. L. Brown Chartered Accountants. Melanie and her husband, Garrett, are the proud parents of a son born in June 1998.

'95 Clinton Baker, BSc, is an RCMP officer posted to Bella Coola, B.C. Clint is a newlywed. He and his wife, Lisa, were married in August.

Elmer Ghostkeeper, MA, '80 BA, was awarded a New Sun Fellowship as the first visiting Aboriginal scholar to bring Aboriginal awareness through teaching, researching and relating to McGill School of Environment. He is also the author of *Spirit Giving: A Concept of*

Spiritual Exchange.

Cathleen Hamm, moved to Calgary to become the financial administrator for TransCanada Turbines Ltd. She recently achieved a CMA professional designation.

Kerry McPhail, BEd, '92 BA, is on her way back to U of A for a MEd. She is currently freelancing and preparing for her wedding to **Wade Hayden**.

Shane Rivet, BA(NativeSt), the procurement manager with Apeetogosan (Metis) Development Inc. As manager, Shane obtains Aboriginal business access to government contracts. He is also vice-president of the School of Native Studies Alumni Association.

Yuka Sasano, BSc(PT), recently travelled to Europe and Indonesia for holidays and rhythmic gymnastics. She is still coaching in this field and plans to take a group of gymnasts to perform in Sweden in July 1999. She currently works in a private practice in Edmonton.

Carolyn Stiles, BEd, and her husband welcomed a son to their family this past August. She will return to teaching at Christian Life School next March.

Erin Walker, BA, and her husband own a quarter horse training, sales and boarding operation located between Camrose and Stettler in Central, Alberta. Erin is also the manager of personal banking in Camrose.

Clarence Wong, MD, and **Karen Louie**, MD, were recently married in

Calgary. Clarence has begun a fellowship in gastroenterology at the U of A. Karen has opened a family practice.

Susan Yackabowski, BPE, is head coach of the Medicine Hat College women's basketball team, as well as a part-time instructor. She recently completed a massage therapy program.

'96 Christina (Chrisy) Kitsco, BSc, is teaching English to both elementary and adult Japanese. Her sister, **Tricia Kitsco**, '97 BSc, is also in Japan with the JET program.

Charles Lee, PhD, '93 MSc, '90 BSc, has completed a two-year postdoctoral fellowship at the Department of Pathology, Cambridge U in England. He will begin a three-year medical genetics rotation at Brigham and Women's Hospital, Harvard Medical School.

Gilles Lussier, BSc(Eng), and **Nikki Lussier**, BCom, will soon be on their way to Harare, Zimbabwe "to support a community towards self-reliance and social well-being." Gilles plans to assist with agricultural groups or with low-cost housing projects. Nikki wants to work to improve the livelihood of Zimbabwe's youth. The couple plan to spend twelve months as volunteers.

Melanie Petrushko, MSc, '91 BSc(Spch&Aud), is currently operating a private practice in speech-language pathology. She and her husband, Perry, are busy trying to keep up with their

two sons.

'97 Rosemary Bacovsky, MHSA, '85 MPharm, '77 BSc(Pharm), '74 BSc, and husband, **William Trefanenko**, '77 BSc (Eng), report from Villahermosa, Tabasco, Mexico. Bill is the project manager for the Mexican oil and gas company, PEMEX. Rosemary is a consultant in the health industry.

Kelly Richard Delanoy, BEd, currently teaches science and physics at Lorne Jenken High School in Barrhead, Alberta. Kelly reports that he uses his extracurricular time to formulate wrestling moves on the mat. (He's also the head wrestling coach.)

Tricia Hager, BSc (Nu), will soon move to London, England for a one-year nursing contract. There, she will work with a private cardiac unit at the Hammersmith Hospital. "The opportunities for international nursing are amazing. Cheers!"

'98 J. Brad Hunter, MD, '86 MSc, has started his residency in radiation oncology in Edmonton.

Scharie Tavcer, BA, recently moved to B.C. to accept a position with Correctional Services. She is a psychological co-therapist in an intensive treatment program for violent offenders. 🦋

Nursing Research

The Autumn 1998 issue of *New Trail* featured a number of stories about research undertaken by researchers in the Faculty of Nursing. It should have been made clear that the research featured was only a sampling of the research activity taking place in the Faculty. In particular, the involvement of **Dr. Ruth Elliott** '56 BSc(Nu), as a co-investigator in the study of how accurately parents report their children's crying (page 17, Autumn 1998) should be noted.

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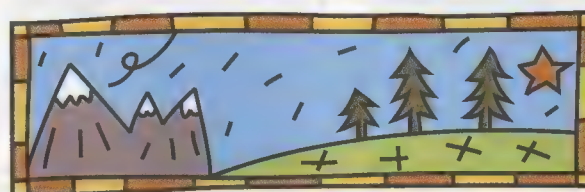
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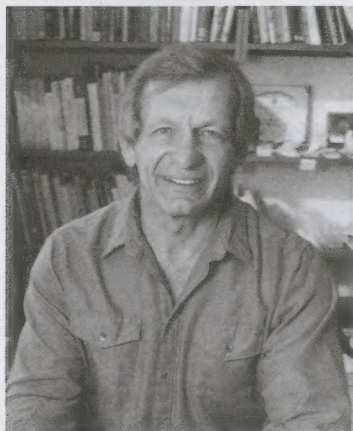
Ivo Caetano De Souza '74 Dip(Ed), of Edmonton in August '98
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Richard Mark Shigehiro '80 BCom, of Calgary in April '97
Mary Stephanie Hay (Sell) '80 BEd, of Edmonton in June '98
Wendy Arlene Hage '80 BEd, of Swan Hills, Alberta in July '98
Pravin Singh Kalsi '83 BSc of Red Deer in July '98
Patrick Henry Kent '86 BSc of Calgary in October '98
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Sheryl Anne McInnes '96 MA, of Edmonton in October '98 ■



A Simple Passion

David Schindler's love of the outdoors remains undiminished

By Winston Pei



ABOUT

DAVID SCHINDLER

Academic Specialty:
Water Ecology

Hobbies:
Sled Dog Racing, Canoeing, Bird-watching

Most dogs he's owned at one time:
90

Number of dogs he currently owns:
60

Favourite place on Earth:
A nice spot in the boreal forest with a lot of lakes...

Favourite place (another possibility)
Some nice spot in the mountains in the subalpine to alpine regions, again with some interesting aquatic regions

Last book read:
Hope: Human and Wild by Bill McKibben

Preferred reading:
Old journals - over the years he's poured through the journals of most of the well-known northern explorers and some of the American ones as well

TRUCK SHOP

When David Schindler founded the Experimental Lakes Project in 1968, he didn't set out to become one of the world's leading water ecologists, help eliminate phosphates from detergents, set policy to reduce the causes of acid rain, or win prestigious scientific awards. He simply wanted a job where he could share his love of science and his love of the outdoors with his three children.

much trouble I and other people had been for those teachers."

So Schindler started university in physics. But he soon found his way back: a summer job with an ecologist led to a change in program, a Rhodes scholarship, and eventually to the ELP. During his 22 years at the helm, the ELP provided the scientific muscle to push through changes in environmental policy around the world.

"Basically I had my family with me a good part of the time and lived in a little cabin out there that didn't have electrical power or running water or indoor plumbing, and I think it was good for them

"I didn't think, and to a large degree I still don't think, that academics have much idea of what's going on in the real world," says Schindler, with a characteristically refreshing candor, about his university job before the ELP, "so I found it a pretty boring place to be." He laughs gently. "But then this job opportunity at the Freshwater Institute came along, to start and run this Experimental Lakes Project, and basically I made what I needed."

What he needed was pretty simple: a good research team, a little cabin for him and his family, and an opportunity to live in and study his beloved outdoors.

"I got interested in environmental science because I like outdoor things," explains Schindler, "When I finished high school, I was good at almost everything. I expressed a desire to do something in biology and they said, well, you could be a conservation officer or a high school teacher, and high school teaching didn't sound like a very good thing to me in those days," — his gentle laughter again — "I knew how

In their best known experiment, Schindler and his team divided a small lake in two using plastic sheeting and added controlled amounts of phosphates to one side. The resulting bloom in algae created a shocking two-tone lake and provided irrefutable evidence of the damage caused by phosphates from detergents in sewer runoff.

A host of awards

A lifetime of research of similar quality and imagination have earned Schindler an international reputation and a host of awards. The 1998 Volvo Environment Prize, worth \$150,000. The first-ever winner of the Miroslaw Romanowski Medal for environmental sciences from the Royal Society of Canada. The first-ever winner of the Stockholm Water Prize, considered the Nobel Prize in water sciences. A hundred other awards.

Schindler is proud of the ELP's scientific success, but what comes across clearest when he recalls that period in his life is that he had *fun*. "You don't run a place like that on that kind of budget without

having a lot of adventures," he says with a twinkle in his eye, "Basically I had my family with me a good part of the time and lived in a little cabin out there that didn't have electric power or running water or indoor plumbing, and I think it was good for them." He adds with no small measure of pride, "All three of my children are ecologists, all aquatic for that matter too. They still talk very fondly about their upbringing.

Sled dog racing

It was his children that got Schindler started on another passion — racing sled dogs. "Racing sled dogs for them was the equivalent of hockey or basketball or something for other children. Our peak season we won every race at the World Championship at The Pas. My son, who was then 17, set a record that stands today, even though it was only a nine-dog event in those days. My son won two, my wife won two, and my youngest daughter won that year, so we won every class that we entered. That's something that's never been done before or since, something we look back on pretty fondly."

In 1990, Schindler and his wife Suzanne Bayley moved to Edmonton to join the faculty of the University of Alberta, Schindler as the Killam Memorial Professor of Ecology. He divides his time between his office in the Biological Science Building and his home on a quarter-section of land located over an hour outside of town. The same love of the outdoors that shaped his career remains undiminished. He still has a kennel of 60 sled dogs, he still races, he still has a cabin in the mountains with no electricity, no indoor plumbing, no running water — "as usual we don't miss them." 🐾



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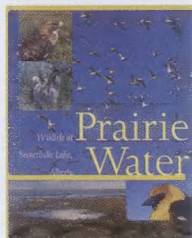


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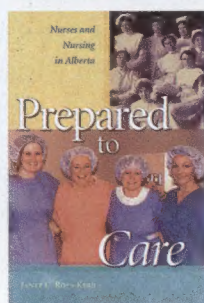
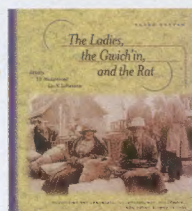
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